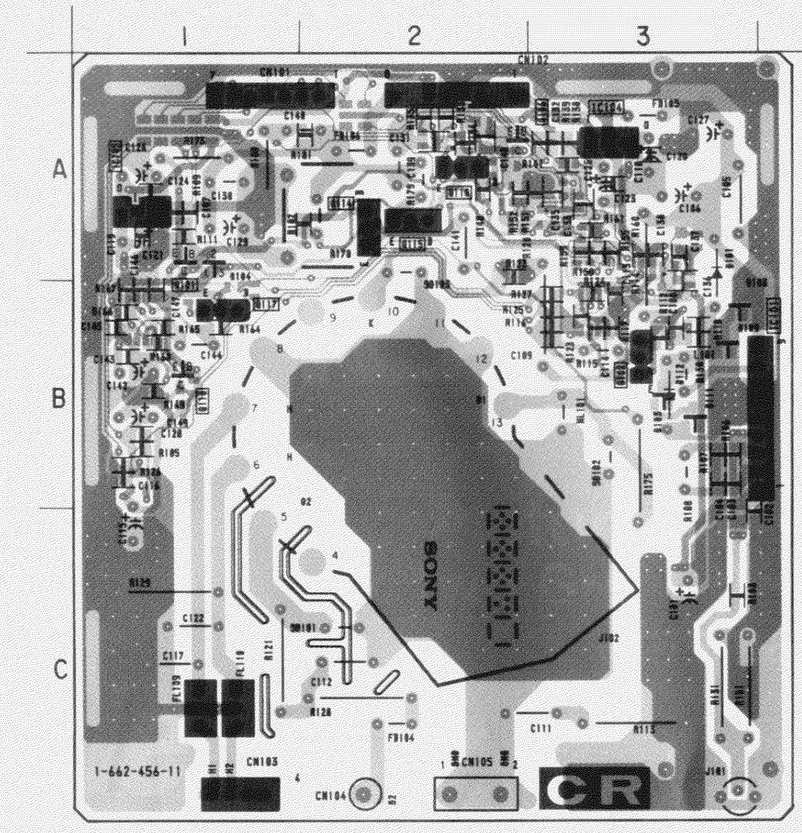
CR (R VIDEO OUT) BOARD

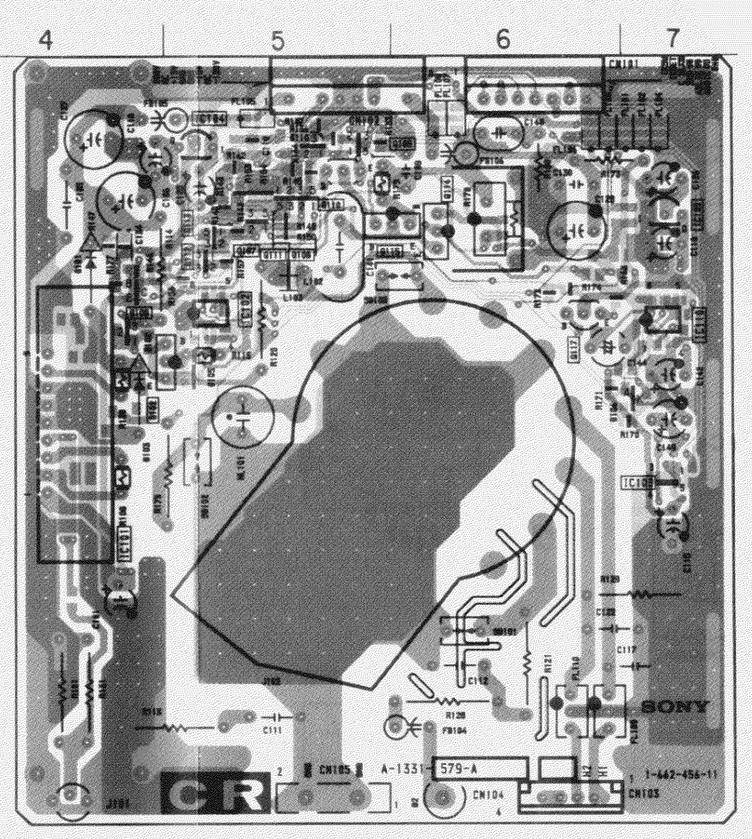
CR BOARD
Semiconductor Location

DIODE	
D101	A-3
D102	B-4
D103	B-3
D104	A-1
D105	B-5
D106	B-7
D110	A-5
IC	
IC101	B-4
IC102	B-5
IC103	B-7
IC104	A-3
IC105	A-1
IC110	B-7
TRANSISTOR	
Q101	A-1
Q102	B-3
Q105	A-5
Q106	A-2
Q107	A-5
Q108	A-5
Q109	B-4
Q110	A-2
Q111	A-5
Q112	A-5
Q113	A-5
Q114	A-2
Q115	A-2
Q117	B-1
Q118	B-1

— CR BOARD — <Conductor side>



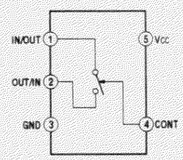
— CR BOARD — <Component side>



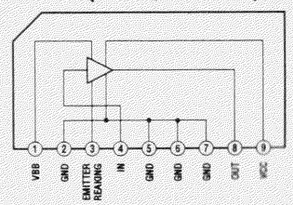
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

CR, CG and CB Board IC Block Diagrams

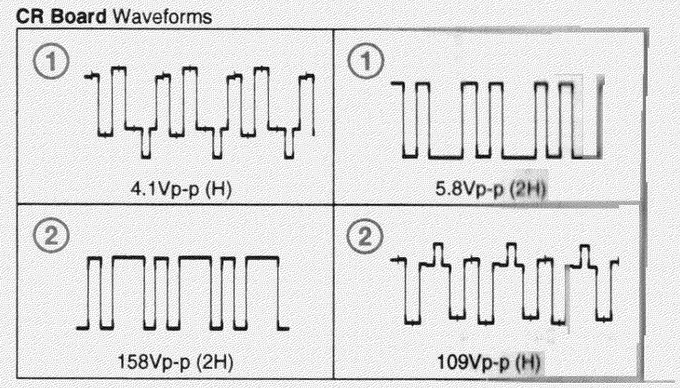
TC4S66F (IC103, 203, 303)



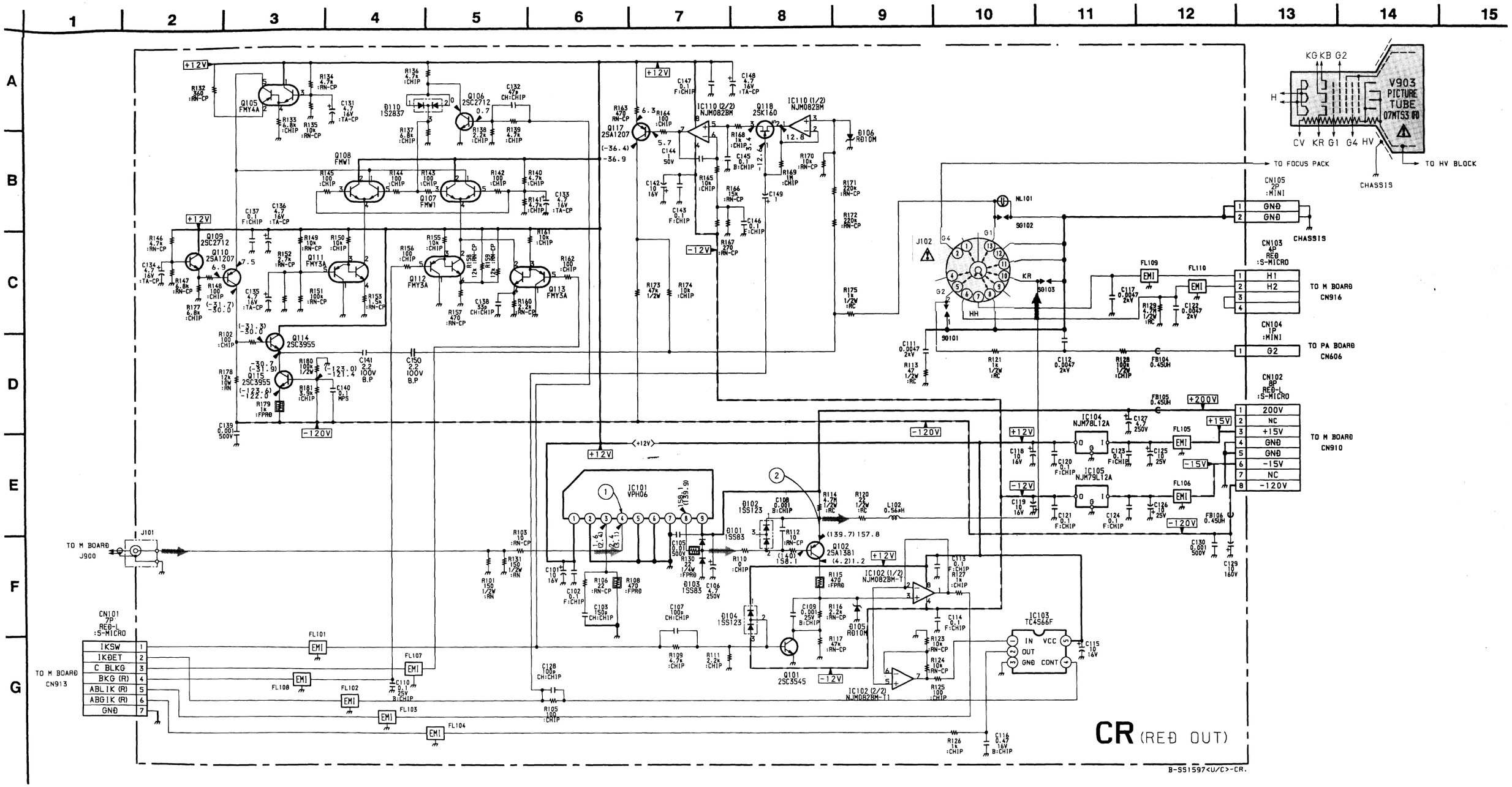
VPH06 (IC101, 201, 301)



CR Board Waveforms



• CR (R VIDEO OUT) DIAGRAM



CR BOARD

Function of Semiconductor

D101	1SS83	IC PROT	IC103	TC4S66F	SAMPLE HOLD	Q108	FMW1	ABG LEVEL
D102	1SS123	IK DET PROT	IC104	NJM78L12A	+12V REG	Q109	2SC2712-YG	G1 AMP
D103	1SS83	IC PROT	IC105	NJM79L12A	–12V REG	Q110	2SA1207-AA	G1 AMP
D104	1SS123	TR PROT	IC110	NJM082BM-T1	BUFFER, BRT. COMP.	Q111	FMY3A-T148	ABG LEVEL
D105	RD10M-B2	IC PROT				Q112	FMY3A-T148	BRT LEVEL
D106	RD10M-B2	IC PROT	Q101	2SC3545-T1T44	IK DET SW	Q113	FMY3A-T148	BLKG LEVEL
D110	1S2837	PROT	Q102	2SA1381-E	IK DET	Q114	2SC3955-DE	BUFFER
			Q105	FMY4A-T148	G1 AMP	Q115	2SC3955-DE	CURRENT SOURCE
IC101	VPH06	VIDEO AMP	Q106	2SC2712-YG	BUFFER	Q117	2SA1207-AA	BRT CLAMP
IC102	NJM082BM-T1	ABL IK AMP	Q107	FMW1	BRT AND BLKG LEVEL	Q118	2SK160-K5	BRT SAMPLE HOLD

Note:
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

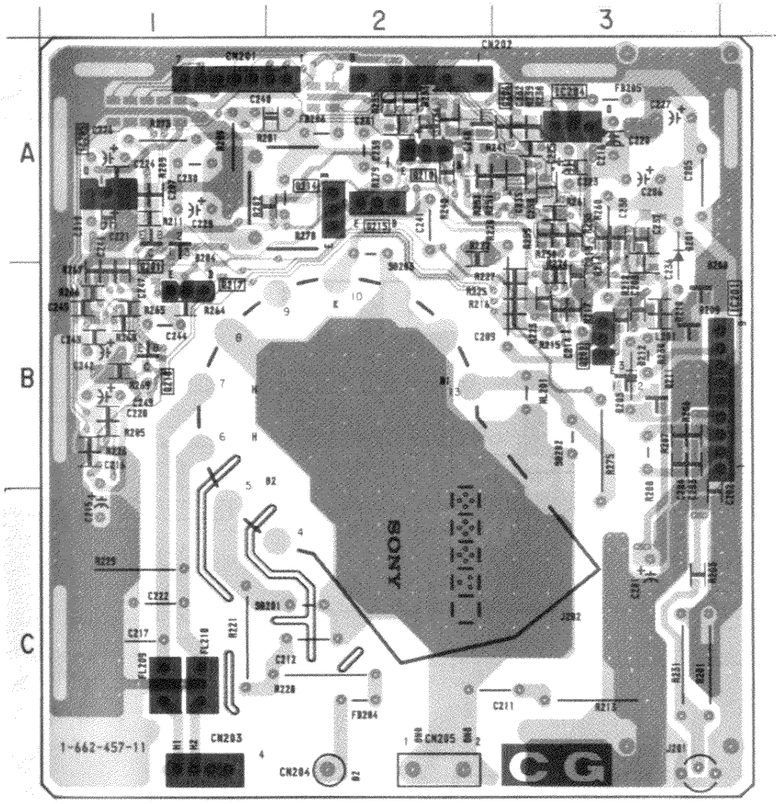
Note:
Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

CG (G VIDEO OUT) BOARD

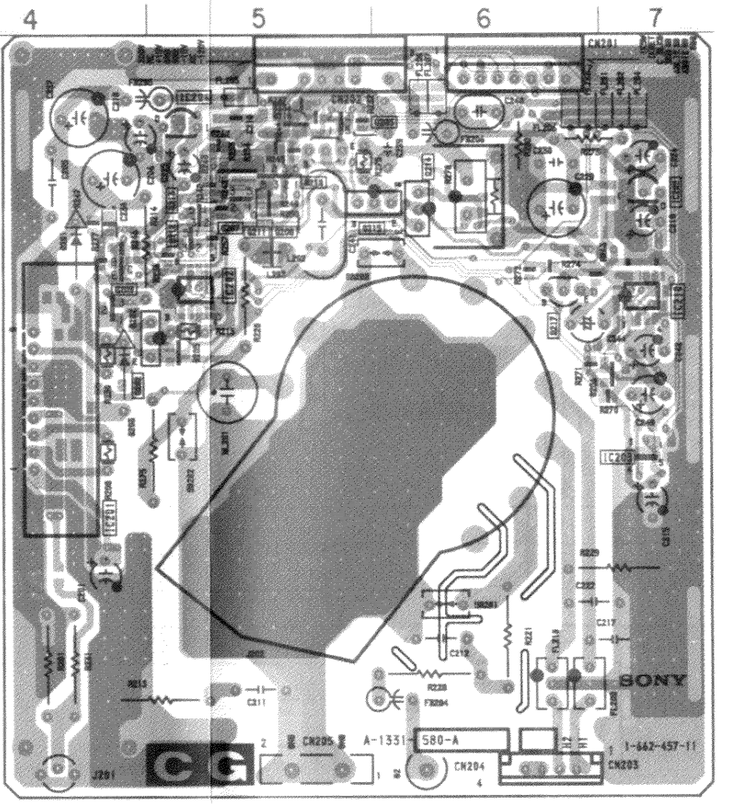
CG BOARD
Semiconductor Location

DIODE	
D201	A-3
D202	B-4
D203	B-3
D204	A-1
D205	B-5
D206	B-7
D210	A-5
IC	
IC201	B-4
IC202	B-5
IC203	B-7
IC204	A-3
IC205	A-1
IC210	B-7
TRANSISTOR	
Q201	A-1
Q202	B-3
Q205	A-5
Q206	A-2
Q207	A-5
Q208	A-5
Q209	B-4
Q210	A-2
Q211	A-5
Q212	A-5
Q213	A-5
Q214	A-2
Q215	A-2
Q217	B-1
Q218	B-1

— CG BOARD — <Conductor side>

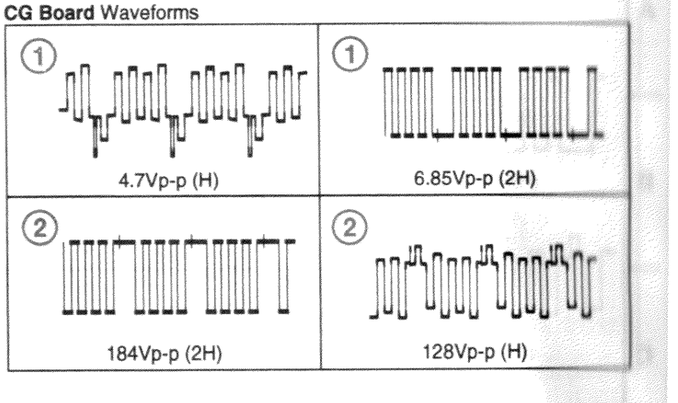


— CG BOARD — <Component side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

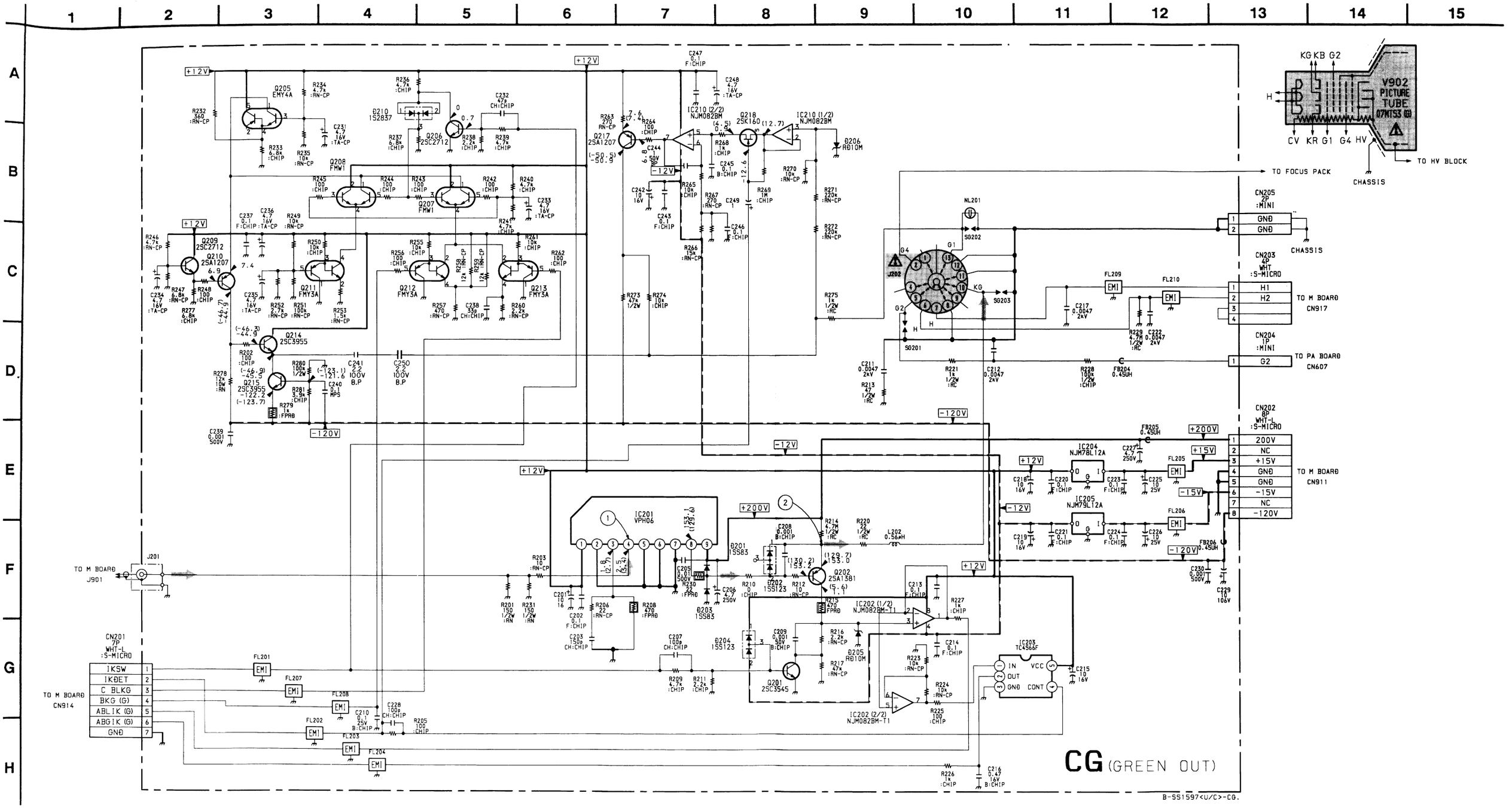
CG Board Waveforms



Schematic Diagram

← CR **board**

• **CG (G VIDEO OUT) DIAGRAM**
• Refer to page 4-104 for IC Block Diagrams



CG BOARD

Function of Semiconductor

D201	1SS83	IC PROT	IC203	TC4S66F	SAMPLE HOLD	Q208	FMW1	ABG LEVEL
D202	1SS123	IK DET PROT	IC204	NJM78L12A	+12V REG	Q209	2SC2712-YG	G1 AMP
D203	1SS83	IC PROT	IC205	NJM79L12A	−12V REG	Q210	2SA1207-AA	G1 AMP
D204	1SS123	TR PROT	IC210	NJM082BM-T1	BUFFER, BRT. COMP	Q211	FMY3A-T148	ABG LEVEL
D205	RD10M-B2	IC PLOT				Q212	FMY3A-T148	BRT LEVEL
D206	RD10M-B2	IC PLOT	Q201	2SC3545-T1T44	IK DET SW	Q213	FMY3A-T148	BLKG LEVEL
D210	1S2837	PLOT	Q202	2SA1381-E	IK DET	Q214	2SC3955-DE	BUFFER
			Q205	FMY4A-T148	G1 AMP	Q215	2SC3955-DE	CURRENT SOURCE
IC201	VPH06	VIDEO AMP	Q206	2SC2712-YG	BUFFER	Q217	2SA1207-AA	BRT CLAMP
IC202	NJM082BM-T1	ABL IK AMP	Q207	FMW1	BRT AND BLKG LEVEL	Q218	2SK160-K5	BRT SAMPLE HOLD

Note:
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

VPH-D50Q/D50QM

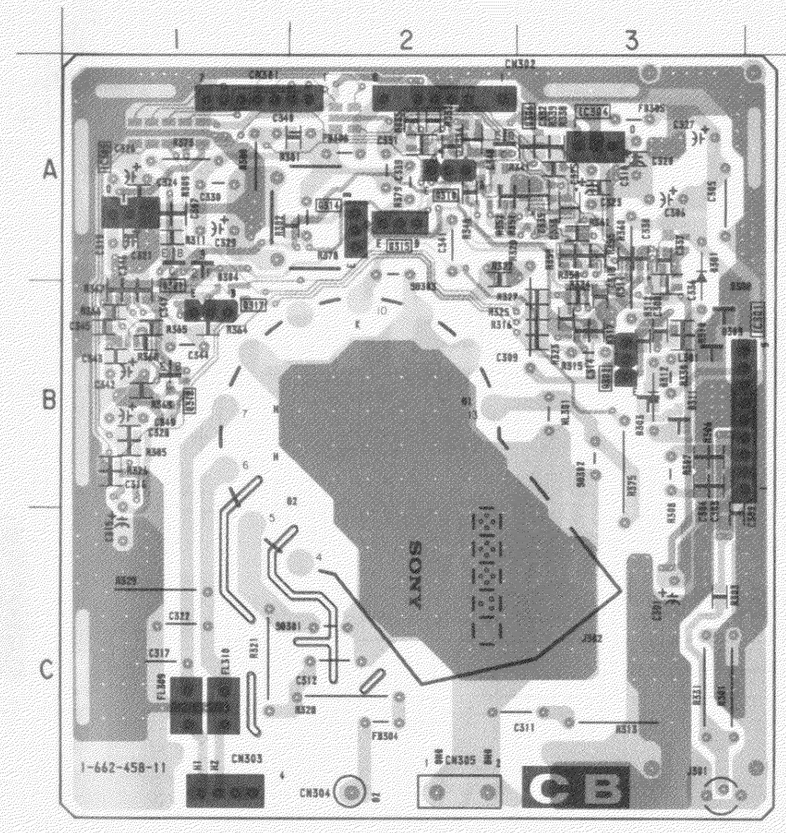
CB

(B VIDEO OUT) BOARD

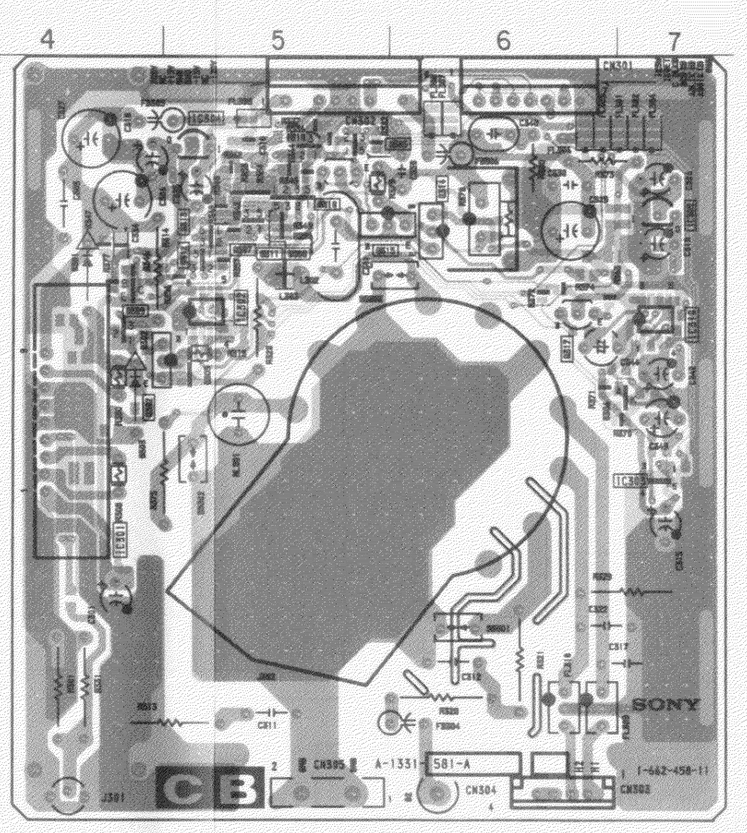
CB BOARD
Semiconductor Location

DIODE	
D301	A-3
D302	B-4
D303	B-3
D304	A-1
D305	B-5
D306	B-7
D310	A-5
IC	
IC301	B-4
IC302	B-5
IC303	B-7
IC304	A-3
IC305	A-1
IC310	B-7
TRANSISTOR	
Q301	A-1
Q302	B-3
Q305	A-5
Q306	A-2
Q307	A-5
Q308	A-5
Q309	B-4
Q310	A-2
Q311	A-5
Q312	A-5
Q313	A-5
Q314	A-2
Q315	A-2
Q317	B-2
Q318	B-2

— CB BOARD — <Conductor side>

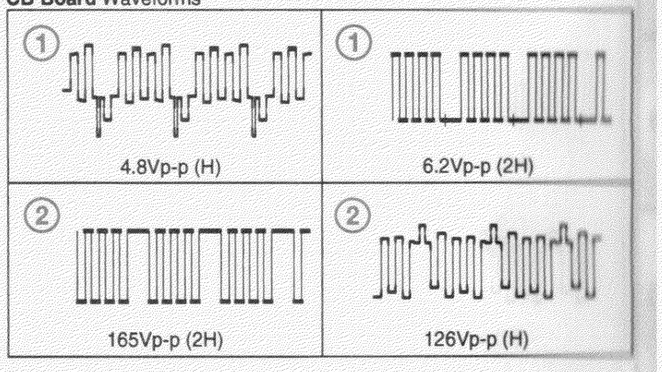


— CB BOARD — <Component side>



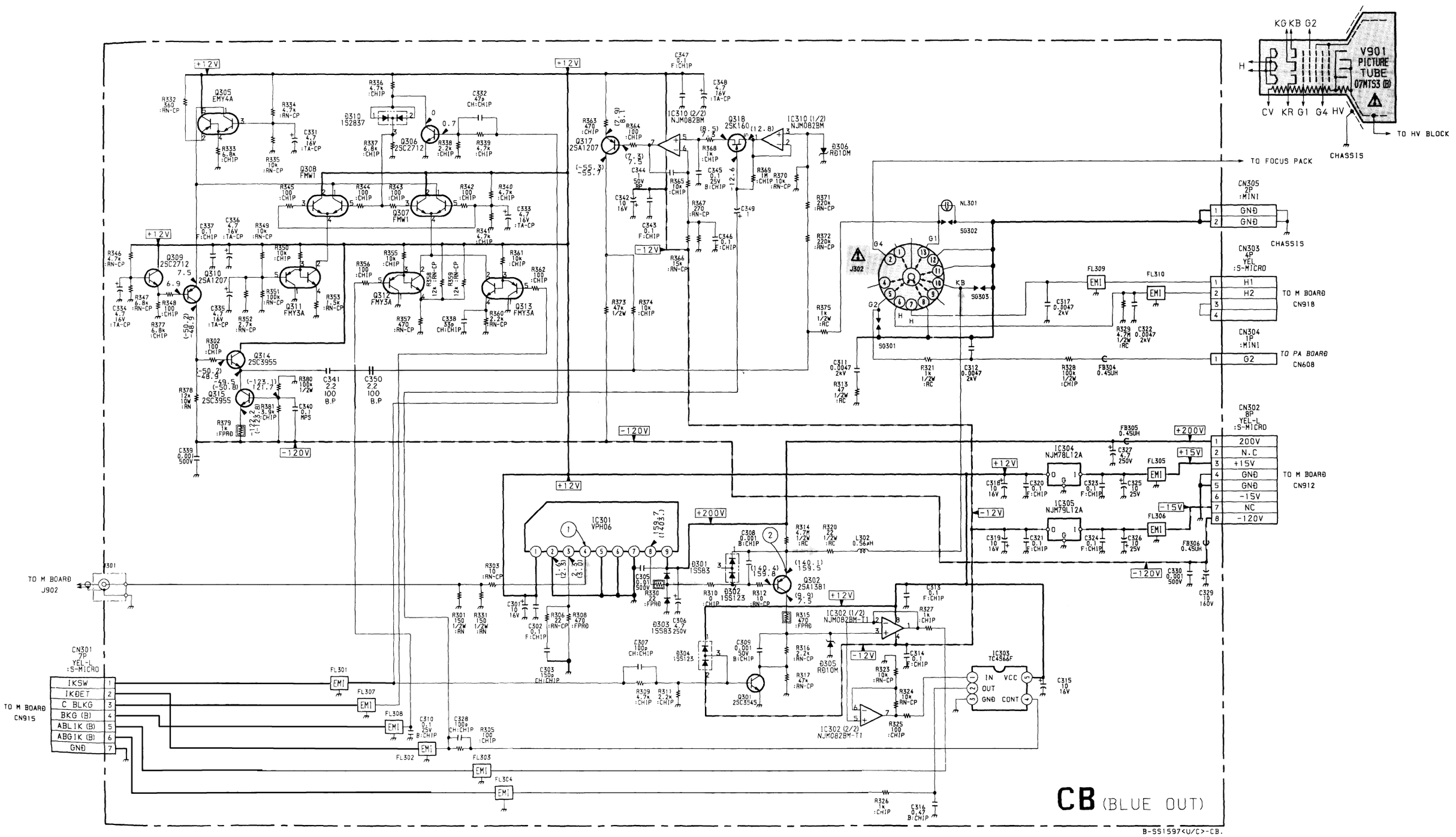
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

CB Board Waveforms



Schematic Diagram

← CG board



CB BOARD

Function of Semiconductor

D301	1SS83	IC PROT	IC303	TC4S66F	SAMPLE HOLD	Q308	FMW1	ABG LEVEL
D302	1SS123	IK DET PROT	IC304	NJM78L12A	+12V REG	Q309	2SC2712-YG	G1 AMP
D303	1SS83	IC PLOT	IC305	NJM79L12A	–12V REG	Q310	2SA1207	G1 AMP
D304	1SS123	TR PLOT	IC310	NJM082BM-T1	BUFFER, BRT. COMP.	Q311	FMY3A-T148	ABG LEVEL
D305	RD10M-B2	IC PLOT				Q312	FMY3A-T148	BRT LEVEL
D306	RD10M-B2	IC PLOT	Q301	2SC3545-T1T44	IK DET SW	Q313	FMY3A-T148	BLKG LEVEL
D310	1S2837	PLOT	Q302	2SA1381-E	IK DET	Q314	2SC3955-DE	BUFFER
			Q305	FMY4A-T148	G1 AMP	Q315	2SC3955-DE	CURRENT SOURCE
IC301	VPH06	VIDEO AMP	Q306	2SC2712-YG	BUFFER	Q317	2SA1207	BRT CLAMP
IC302	NJM082BM-T1	ABL IK AMP	Q307	FMW1	BRT AND BLKG LEVEL	Q318	2SK160-K5	BRT SAMPLE HOLD

Note:
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

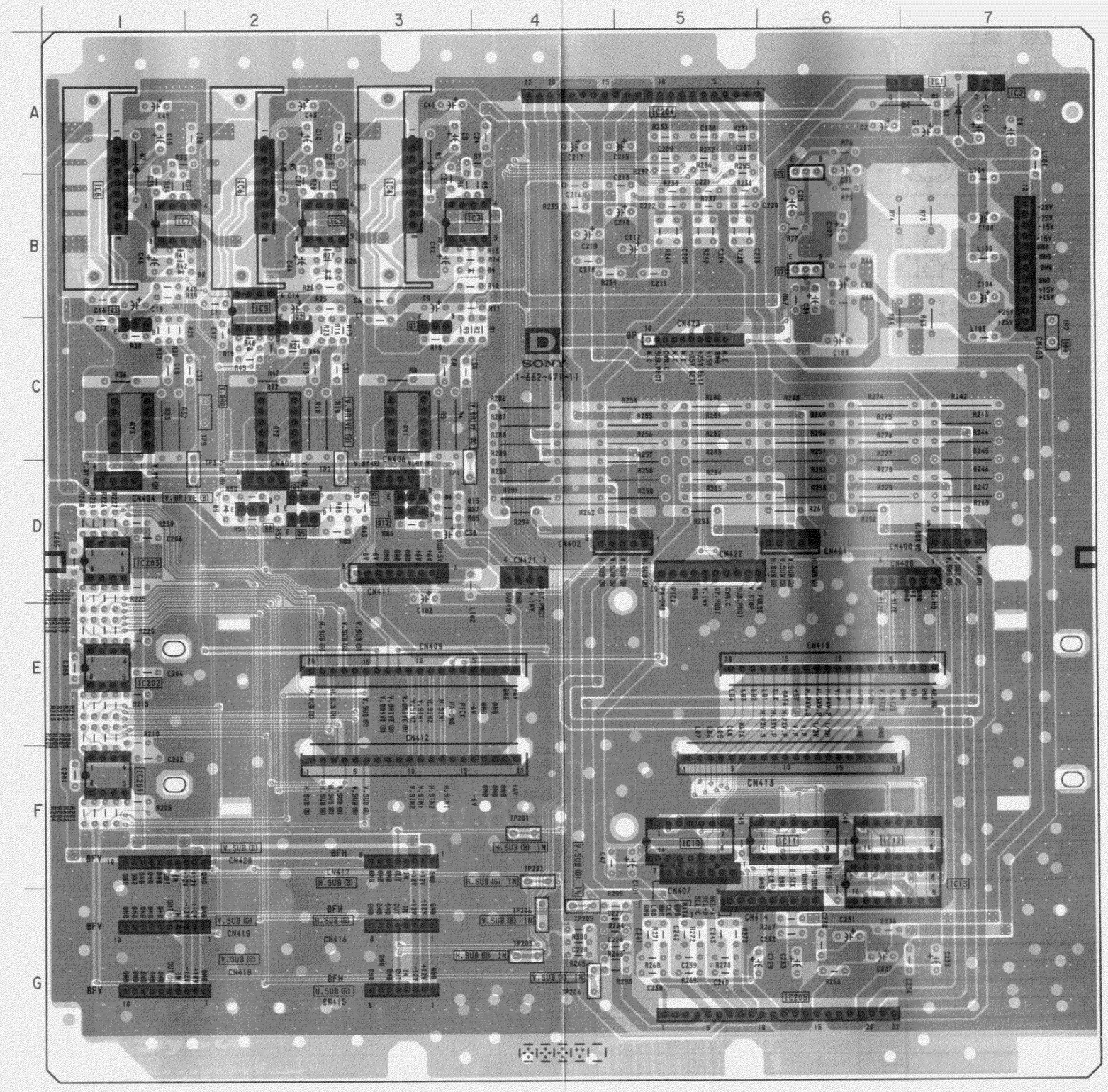
Note:
Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

VPH-D50Q/D50QM

D

(V OUT, H/V SUB OUT) BOARD

— D BOARD — <Conductor side>



D BOARD

Semiconductor Location

DIODE		TEST POINT	
D1	A-7	TP1	D-3
D2	A-7	TP2	D-3
D3	A-3	TP3	D-2
D4	B-3	TP9	C-2
D5	A-2	TP201	F-4
D6	B-2	TP202	F-4
D7	A-1	TP203	G-4
D8	B-1	TP204	G-4
D9	D-2	TP205	G-4
D10	C-2	TP206	G-4
D15	D-3		

IC	
IC1	A-7
IC2	A-7
IC3	B-3
IC4	A-3
IC5	B-2
IC6	A-2
IC7	B-1
IC8	A-1
IC9	B-2
IC10	F-5
IC11	F-6
IC12	F-6
IC13	F-6
IC201	F-1
IC202	E-1
IC203	D-1
IC204	A-5
IC205	G-6

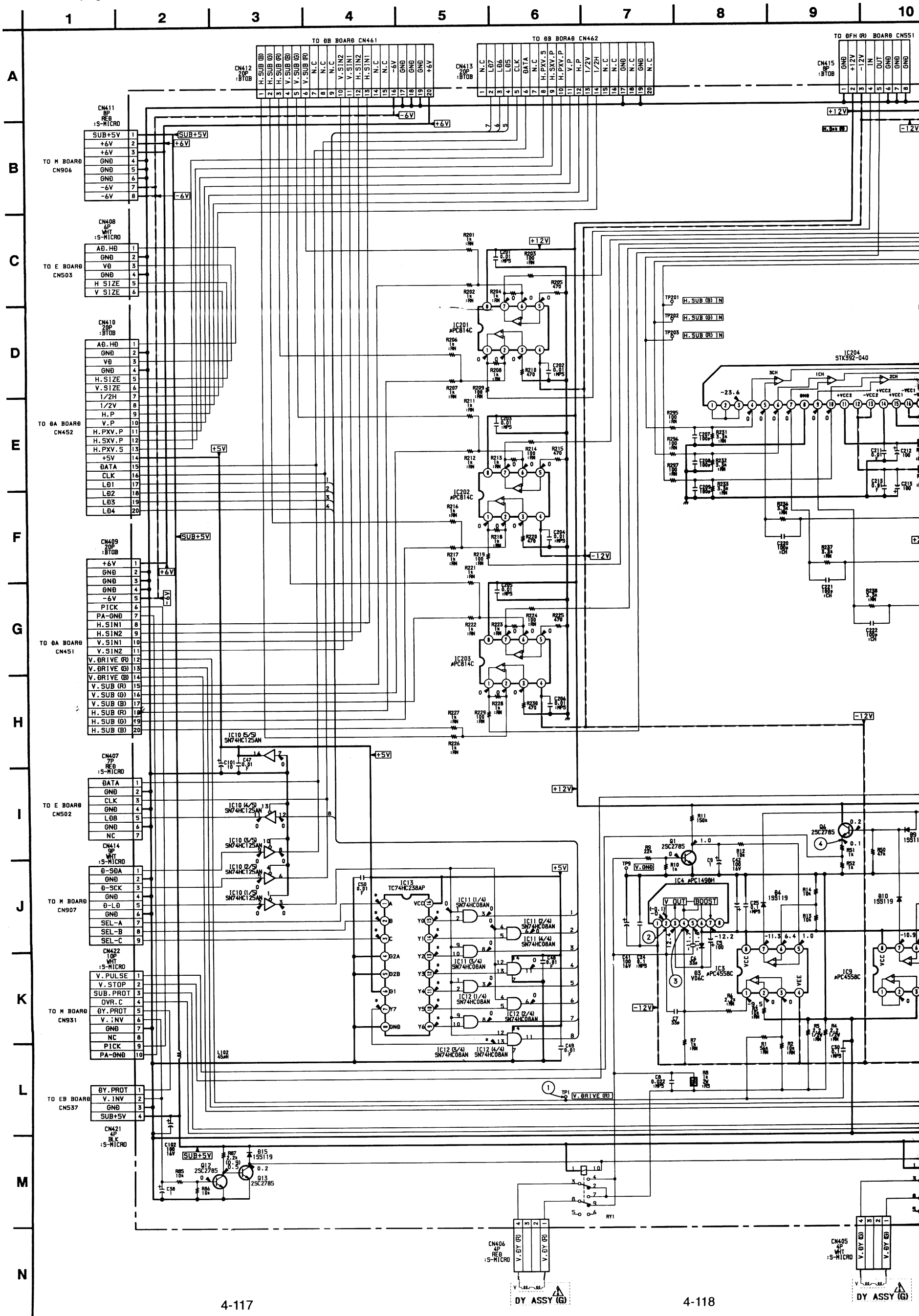
TRANSISTOR	
Q1	C-3
Q2	C-2
Q3	C-1
Q4	D-2
Q5	D-2
Q6	D-2
Q7	B-6
Q9	B-6
Q12	D-3
Q13	D-3

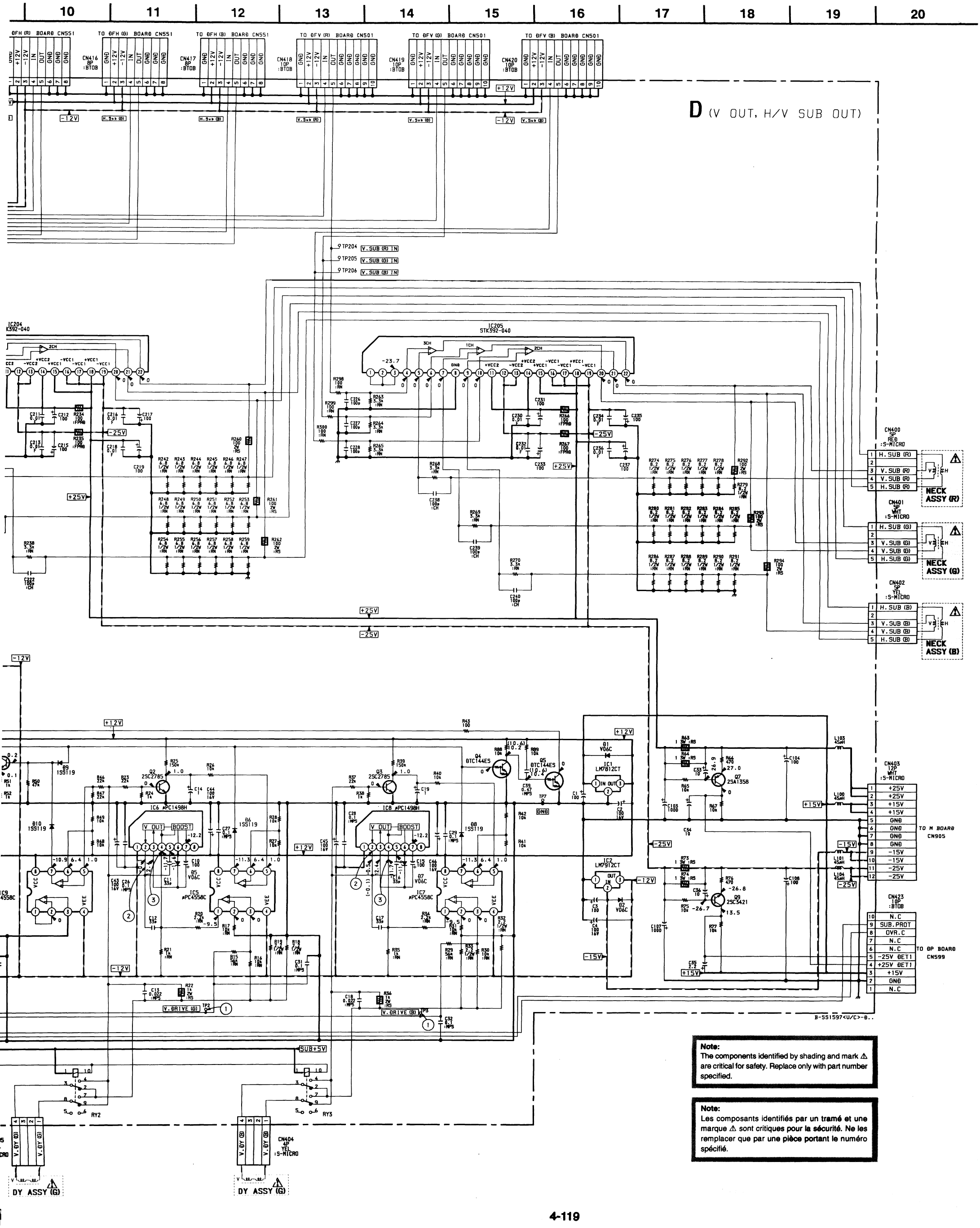
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

Schematic Diagram

← CB board

- **D (V OUT, H/V SUB OUT) DIAGRAM**
- Refer to page 4-120 for Waveforms
- Refer to page 4-120 for Function of Semiconductor
- Refer to page 4-120 for IC Block Diagrams





Note:
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

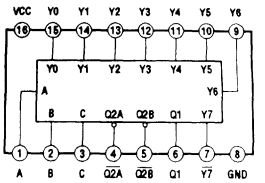
D BOARD

Function of Semiconductor

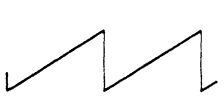
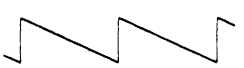
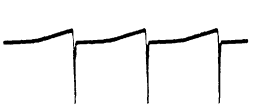
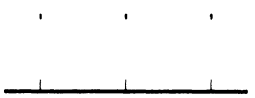
D1	V06C	+12V REG PROT
D2	V06C	–12V REG PROT
D3	V06C	PULSE CHARGE-1
D4	1SS119-25	GATE-1
D5	V06C	PULSE CHARGE-2
D6	1SS119-25	GATE-2
D7	V06C	PULSE CHARGE-3
D8	1SS119-25	GATE-3
D9	1SS119-25	GATE-4
D10	1SS119-25	GATE-5
D15	1SS119-25	DISCHARGE
IC1	M7812CT	+12V REG
IC2	LM7912CT	–12V REG
IC3	UPC4558C	R-VIDEO AMP
IC4	UPC1498H	R-VIDEO OUT
IC5	UPC4558C	G-VIDEO AMP
IC6	UPC1498H	G-VIDEO OUT
IC7	UPC4558C	B-VIDEO AMP
IC8	UPC1498H	B-VIDEO OUT
IC9	UPC4558C	V.PULSE GEN
IC10	SN74HC125AN	BUS BUFFER
IC11	SN74HC08AN	LD AND 1
IC12	SN74HC08AN	LD AND 2
IC13	TC74HC238AP	LD SELECT
IC201	UPC814C	R-SUB MATRIX
IC202	UPC814C	G-SUB MATRIX
IC203	UPC814C	B-SUB MATRIX
IC204	STK392-040	H-SUB OUT
IC205	STK392-040	V-SUB OUT
Q1	2SC2785-HFE	V.PULSE DET-1
Q2	2SC2785-HFE	V.PULSE DET-2
Q3	2SC2785-HFE	V.PULSE DET-3
Q4	DTC144ESA-TP	V.STOP CONT SW-1
Q5	DTC144ESA-TP	V.STOP CONT SW-2
Q6	2SC2785-HFE	V.PULSE BUFF
Q7	2SA1358-Y	+25V CURRENT DET
Q9	2SC3421-Y	–25V CURRENT DET
Q12	2SC2785-HFE	RELAY DRIVE-1
Q13	2SC2785-HFE	RELAY DRIVE-2

D Board IC Block Diagram

TC74HC238AP (IC13)



D Board Waveforms

①  4.6Vp-p (V)	②  13.4Vp-p (V)	③  0.75Vp-p (V)
④  10Vp-p (V)		

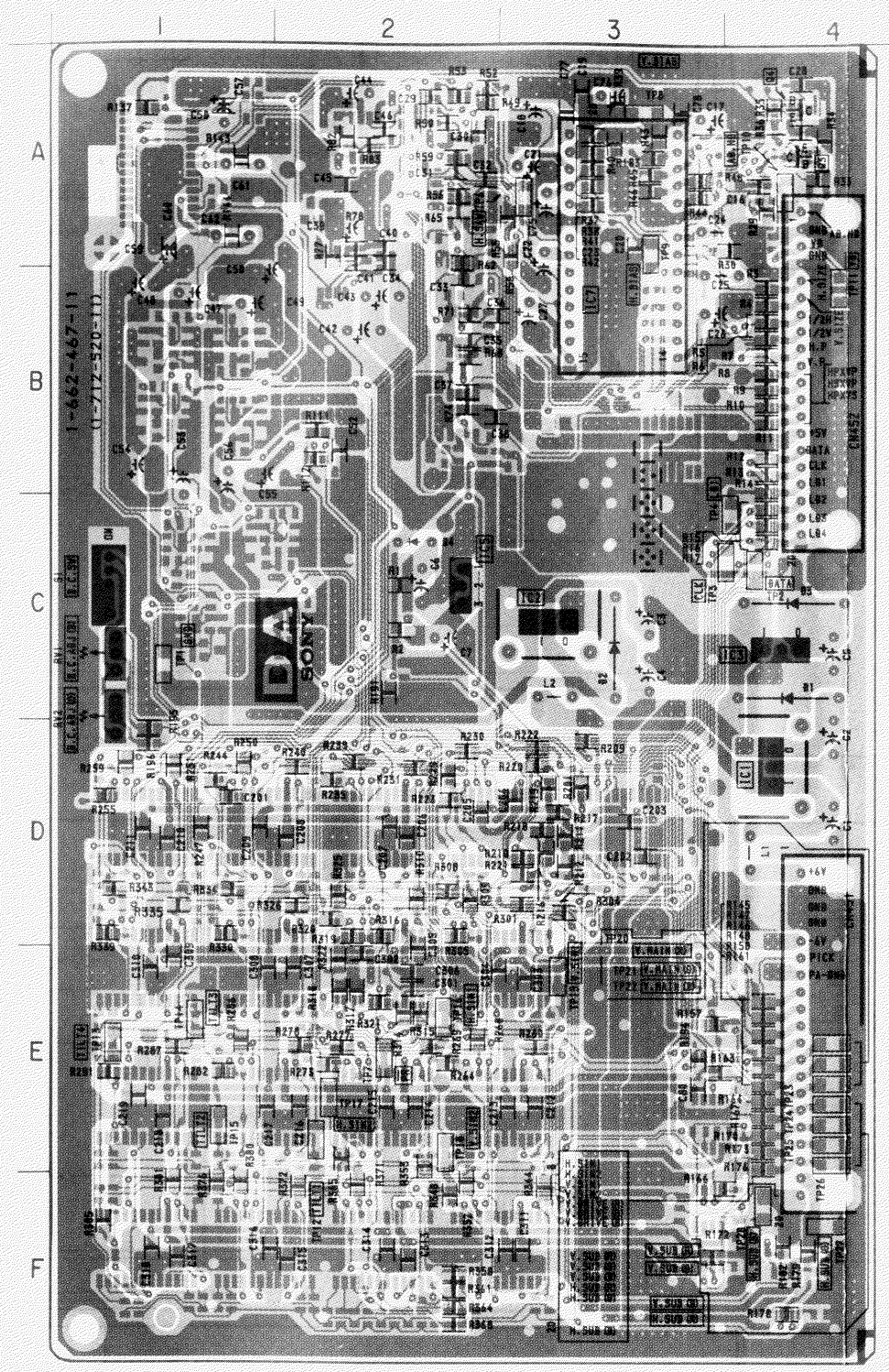
DA (WAVEFORM AMP, WAVEFORM GEN, H/V BIAS, H/V ZONE CONTROL) BOARD

DA BOARD

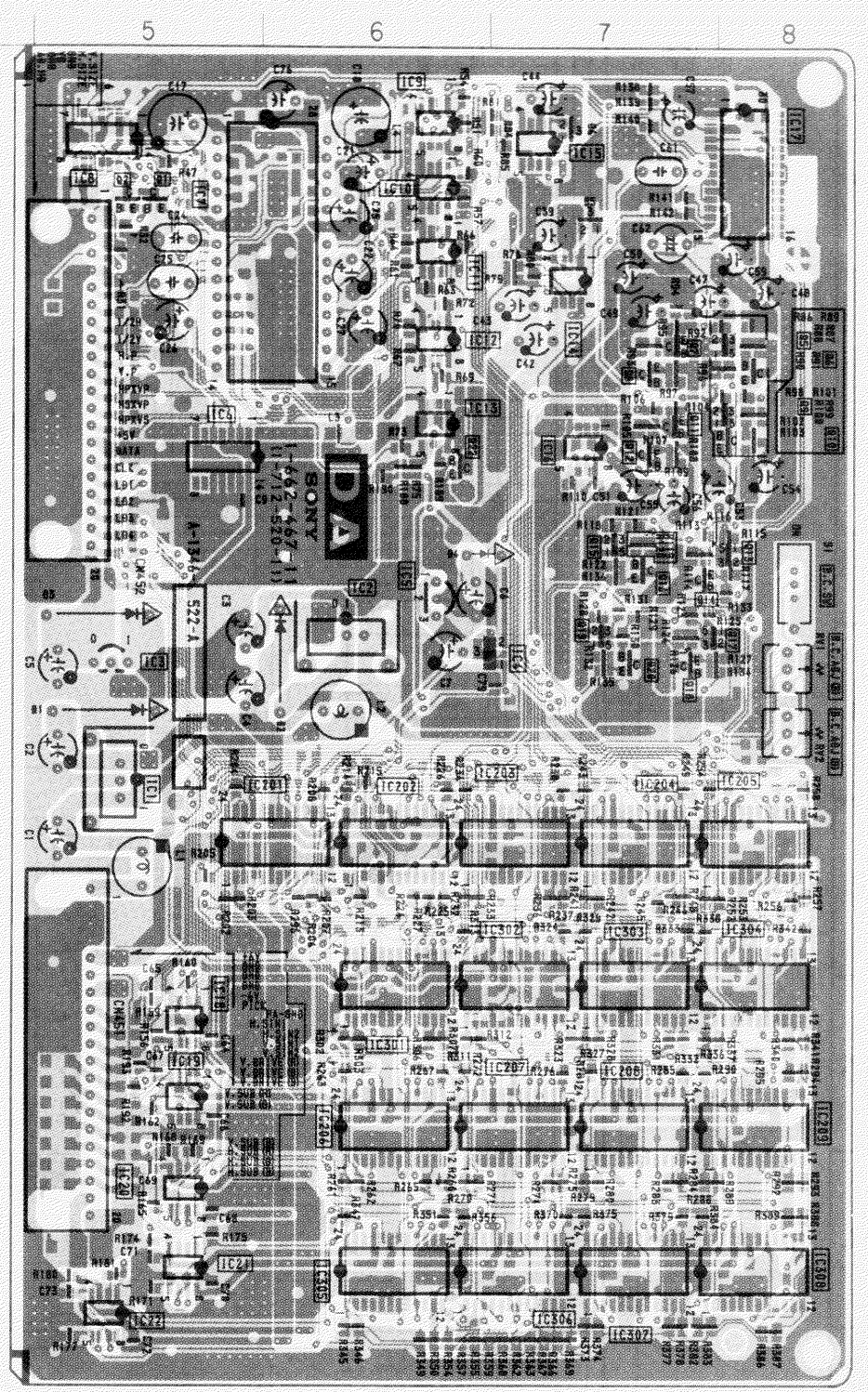
Semiconductor Location

DIODE		Q6	B-8
		Q7	B-7
		Q8	B-7
D1	C-4	Q9	B-8
D2	C-3	Q10	B-8
D3	C-4	Q11	B-7
D4	C-2	Q12	B-7
D5	A-7	Q13	C-8
D6	A-7	Q14	C-7
		Q15	C-7
IC		Q16	C-7
		Q17	C-7
IC1	D-4	Q18	C-7
IC2	C-3	Q19	C-7
IC3	C-4	Q20	C-7
IC4	C-6		
IC5	C-2	Q22	B-6
IC6	B-5		
IC7	A-3	VARIABLE RESISTOR	
IC8	A-5		
IC9	A-6		
IC10	A-6	RV1	C-1
		RV2	C-1
IC11	A-6		
IC12	B-6	TEST POINT	
IC13	B-6		
IC14	B-7	TP1	C-1
IC15	A-7	TP2	C-4
IC16	B-7	TP3	C-4
IC17	A-8	TP4	C-4
IC18	E-5	TP6	A-3
IC19	E-5	TP7	E-2
IC20	E-5	TP8	A-3
		TP9	A-3
IC21	F-5	TP10	A-4
IC22	F-5	TP11	B-4
IC201	D-5		
IC202	D-6	TP12	F-2
IC203	D-7	TP13	E-1
IC204	D-7	TP14	E-1
IC205	D-8	TP15	E-1
IC206	E-6	TP16	E-2
IC207	E-7	TP17	E-2
IC208	E-7	TP18	E-2
		TP19	E-3
IC209	E-8	TP20	E-4
IC301	E-6	TP21	E-4
IC302	E-7		
IC303	E-7	TP22	E-4
IC304	E-8	TP23	E-4
IC305	F-6	TP24	E-4
IC306	F-7	TP25	E-4
IC307	F-7	TP26	E-4
IC308	F-8	TP27	F-4
		TP28	F-4
TRANSISTOR			
Q1	A-5		
Q2	A-5		
Q3	A-4		
Q4	A-4		
Q5	B-8		

— DA BOARD — <Conductor side>



— DA BOARD — <Component side>

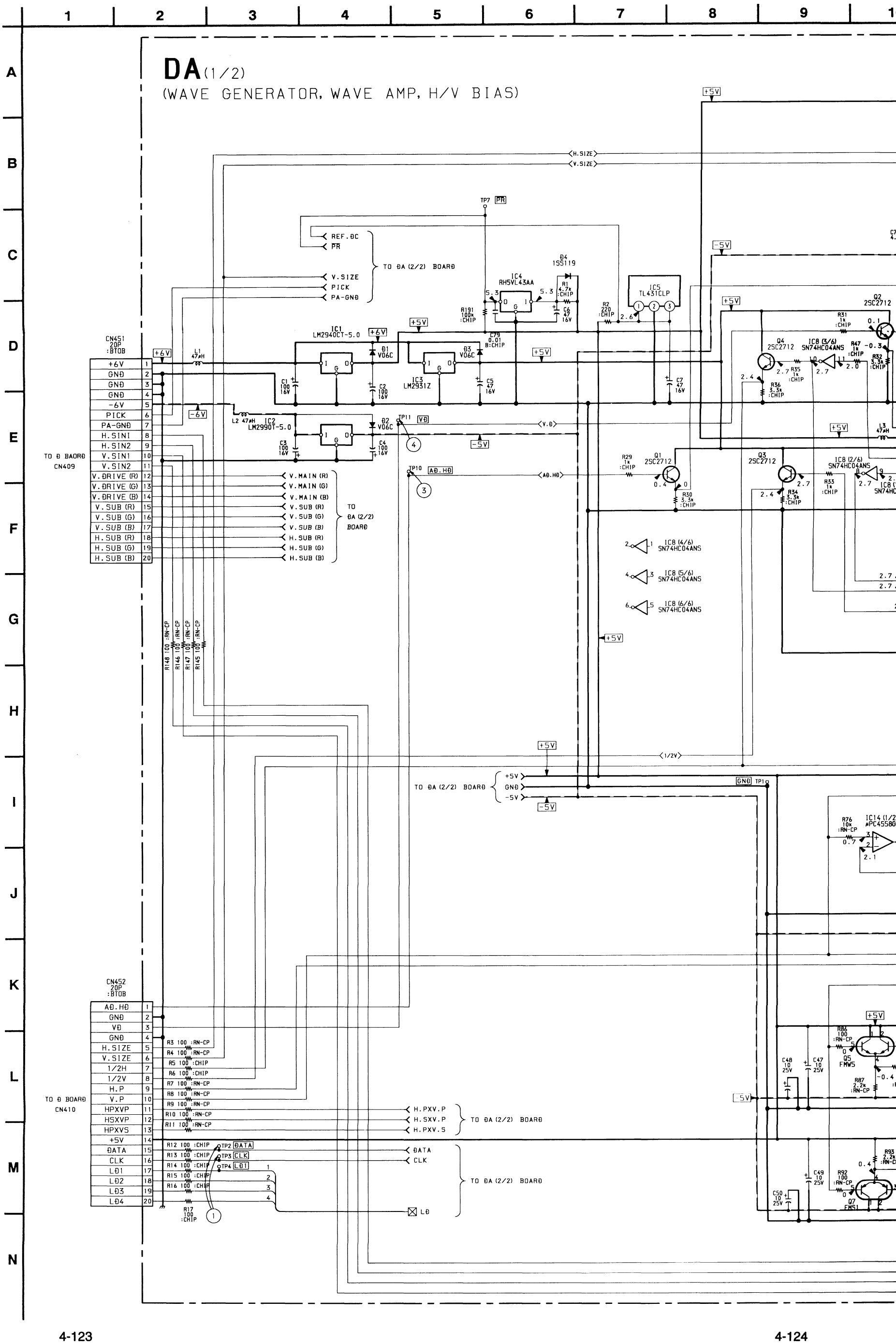


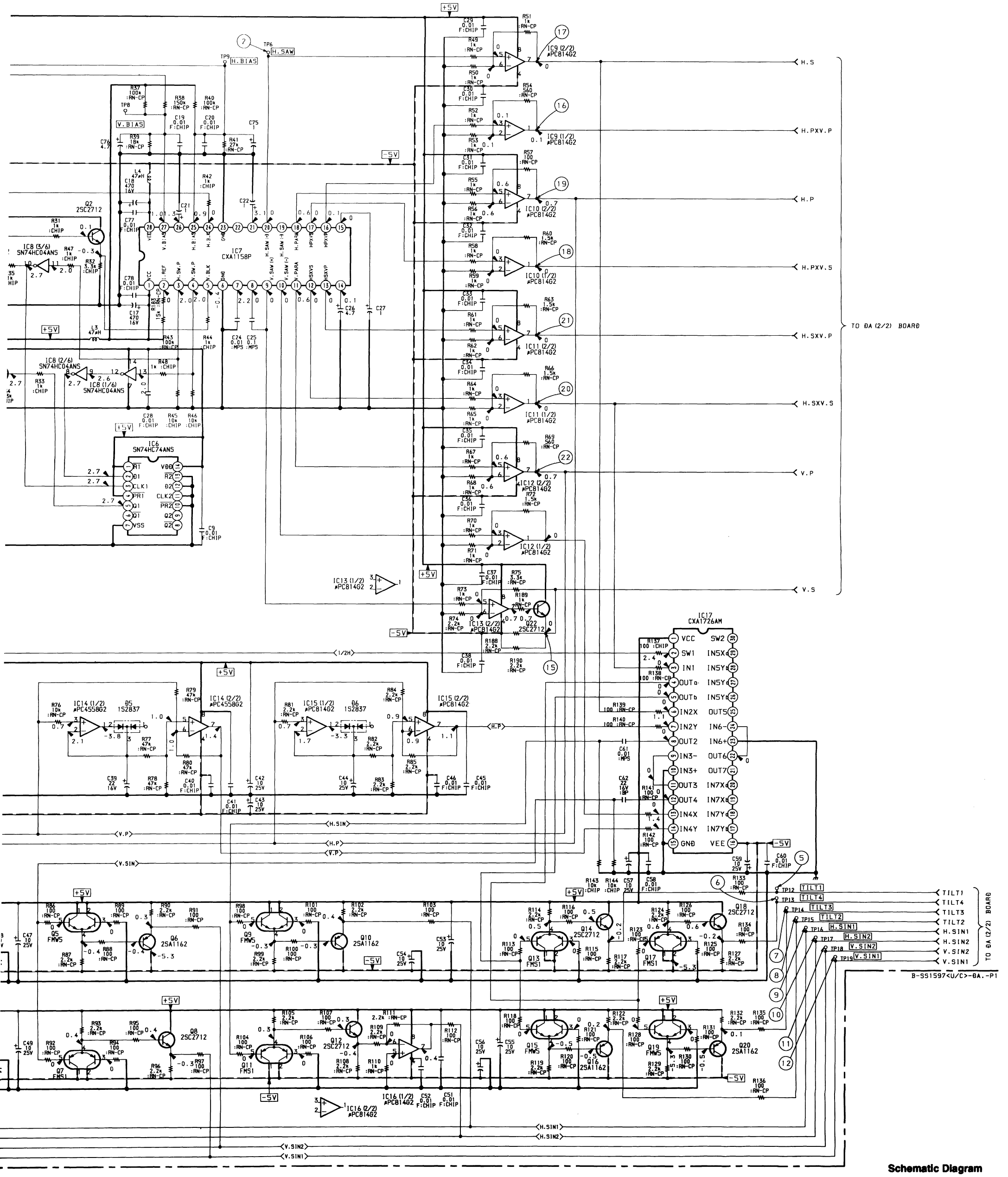
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

- **DA (1/2) (WAVEFORM AMP, WAVEFORM GEN, H/V BIAS) DIAGRAM**
- Refer to page 4-129 for Waveforms
- Refer to page 4-130 for Function of Semiconductor
- Refer to page 4-131 for IC Block Diagrams

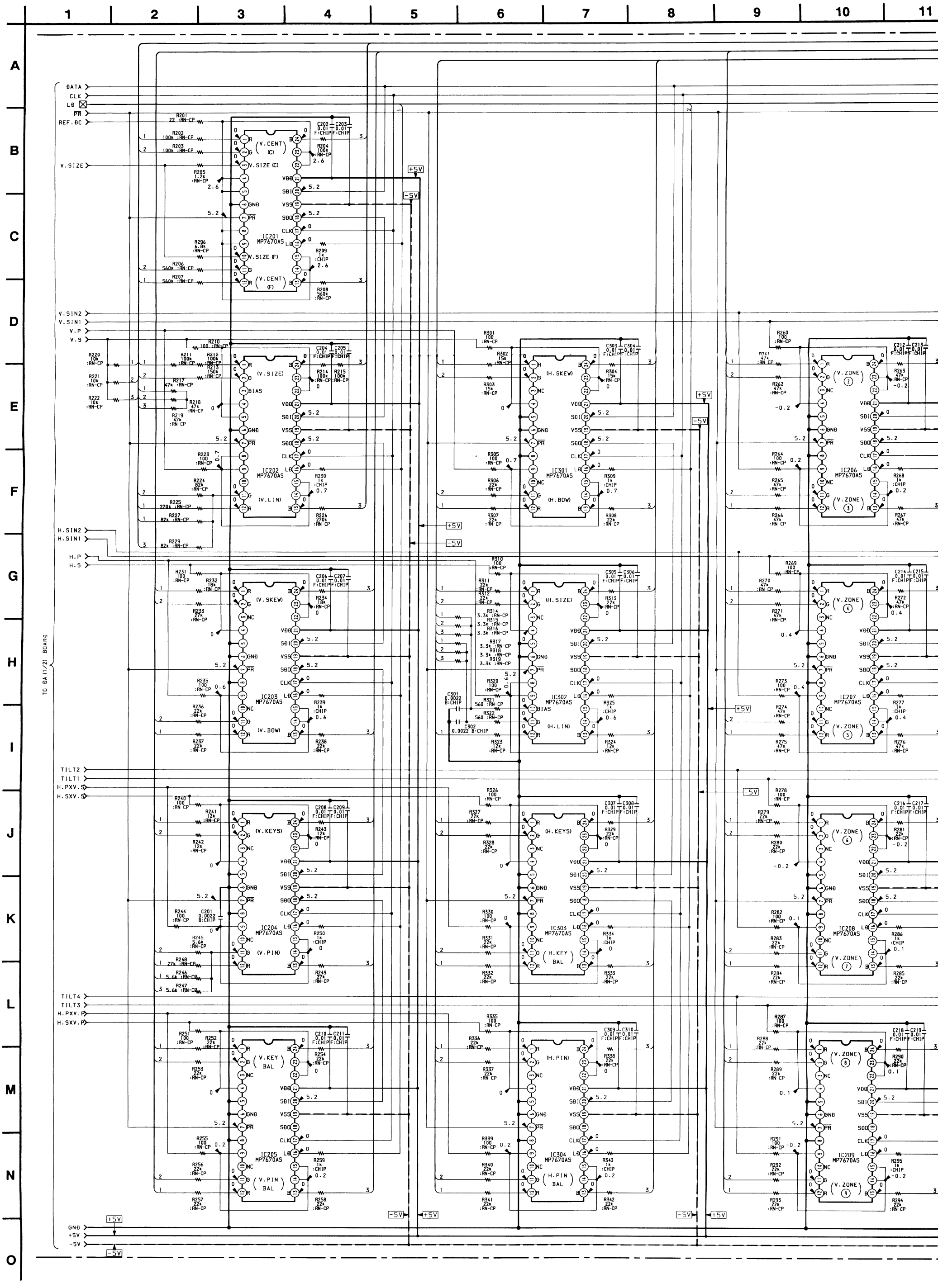
DA (1/2)

(WAVE GENERATOR, WAVE AMP, H/V BIAS)




+5V
-5V
H.BIAS
H.SAW
V.BIAS
TP6
TP8
TP9
IC7
CXA1158P
IC6
SN74HC74ANS
IC8 (3/6)
SN74HC04ANS
IC8 (2/6)
SN74HC04ANS
IC8 (1/6)
SN74HC04ANS
IC9 (2/2)
μPC814G2
IC9 (1/2)
μPC814G2
IC10 (2/2)
μPC814G2
IC10 (1/2)
μPC814G2
IC11 (2/2)
μPC814G2
IC11 (1/2)
μPC814G2
IC12 (2/2)
μPC814G2
IC12 (1/2)
μPC814G2
IC13 (1/2)
μPC814G2
IC13 (2/2)
μPC814G2
IC14 (1/2)
μPC4558G2
IC14 (2/2)
μPC4558G2
IC15 (1/2)
μPC814G2
IC15 (2/2)
μPC814G2
IC16 (1/2)
μPC814G2
IC16 (2/2)
μPC814G2
IC17
CXA1726AM
H.S
H.PXV.P
H.P
H.PXV.S
H.SXV.P
H.SXV.S
V.P
V.S
TO ĐA (2/2) BOARĐ
TILT1
TILT4
TILT3
TILT2
H.SIN1
H.SIN2
V.SIN2
V.SIN1
TO ĐA (2/2) BOARĐ
B-SS1597<U/C>-ĐA.-P1
1/2H
H.SIN
V.P
H.P
V.SIN
Q2 2SC2712
Q5 FMW5
Q6 2SA1162
Q7 FMS1
Q8 2SC2712
Q9 FMW5
Q10 2SA1162
Q11 FMS1
Q12 2SC2712
Q13 FMS1
Q14 2SC2712
Q15 FMW5
Q16 2SA1162
Q17 FMS1
Q18 2SC2712
Q19 FMW5
Q20 2SA1162
Q22 2SC2712
Q3 1S2837
Q6 1S2837

- **DA (2/2) (H/V ZONE CONTROL) DIAGRAM**
- Refer to page 4-121 for Printed Wiring Board
- Refer to page 4-129 for Waveforms
- Refer to page 4-130 for Function of Semiconductor
- Refer to page 4-131 for IC Block Diagrams



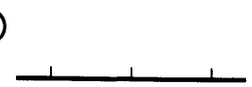
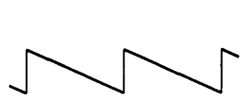
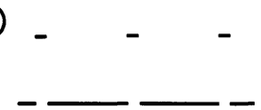
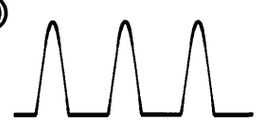
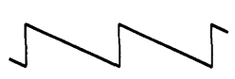
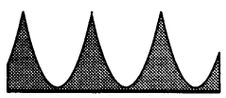
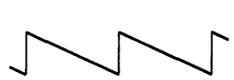
DA (2/2)

(H/V ZONE CONTROL
H/V SIZE/LIN CONTROL
H/V KEY/PIN CONTROL
H/V SKEW/BOW CONTROL
H/V KEY BAL/PIN BAL CONTROL)

B-SS1597<U/C>-0A.-P2

VPH-D50Q/D50QM

DA Board Waveforms

①  5Vp-p (V)	②  1.9Vp-p (H)	③ 5.7Vp-p (H/2H)
④  4.2Vp-p (V)	⑤ 1.5Vp-p (V)	⑥ 1.6Vp-p (V)
⑦ 1.5Vp-p (V)	⑧ 1.5Vp-p (V)	⑨ 1Vp-p (H/2H)
⑩  1.1Vp-p (H/2H)	⑪ 0.7Vp-p (V)	⑫ 0.63Vp-p (V)
⑬ 4.5Vp-p (V)	⑭ 0.7Vp-p (V)	⑮  3.7Vp-p (H)
⑯  1.7Vp-p (V)	⑰  4Vp-p (H/2H)	⑱ 1.5Vp-p (H/2H)
⑲ 2.4Vp-p (H/2H)	⑳ 3.6Vp-p (V)	㉑ 3.4Vp-p (V)
㉒ 2Vp-p (V)		

DA BOARD

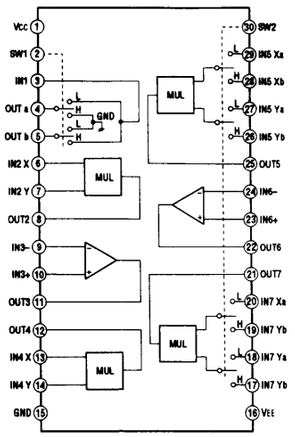
Function of Semiconductor

D1	V06C	+5V REG PROT	Q16	2SA1162-YG	TILT2-BUFFER
D2	V06C	–5V REG PROT	Q17	FMS1	TILT4-SW
D3	V06C	+5V REG PROT-2	Q18	2SC2712-YG	TILT4-BUFFER
D4	1SS119-25	DISCHARGE	Q19	FMW5	TILT3-SW
D5	1S2837	PEAK HOLD-1	Q20	2SA1162-YG	TILT3-BUFFER
D6	1S2837	PEAK HOLD-2	Q22	2SC2712-YG	V.SAW BUFFER
IC1	LM2940CT-5.0	+5V REG			
IC2	LM2990T-5.0	–5V REG			
IC3	LM2931Z-5.0	+5V REG-2			
IC4	RH5VL43AA-T1	DAC RESET			
IC5	TL431CLP	REF DC			
IC6	SN74HC74ANS	D-F.F.			
IC7	CXA1158P	WAVE GENERATOR			
IC8	SN74HC04ANS	INVERTER			
IC9	UPC814G2-T1	WAVE AMP-1			
IC10	UPC814G2-T1	WAVE AMP-2			
IC11	UPC814G2-T1	WAVE AMP-3			
IC12	UPC814G2-T1	WAVE AMP-4			
IC13	UPC814G2-T1	WAVE AMP-5			
IC14	UPC4558G2	V.PARA BIAS			
IC15	UPC814G2-T1	H.PARA BIAS			
IC16	UPC814G2-T1	H.SIN2 INV			
IC17	CXA1726AM	MULTIPLEX			
IC18	UPC814G2-T1	V-MATRIX-1			
IC19	UPC814G2-T1	V-MATRIX-2			
IC20	UPC814G2-T1	SUB-MATRIX-1			
IC21	UPC814G2-T1	SUB-MATRIX-2			
IC22	UPC814G2-T1	SUB-MATRIX-3			
IC201	MP7670AS-TE2	V.CENT CNTROL			
IC202	MP7670AS-TE2	V.SIZE/LIN CNTROL			
IC203	MP7670AS-TE2	V.SKEW/BOW CNTROL			
IC204	MP7670AS-TE2	V.KEY/PIN CNTROL			
IC205	MP7670AS-TE2	V.KEY BAL/PIN BAL CNTROL			
IC206	MP7670AS-TE2	V.ZONE 2/3 CNTROL			
IC207	MP7670AS-TE2	V.ZONE 4/5 CNTROL			
IC208	MP7670AS-TE2	V.ZONE 6/7 CNTROL			
IC209	MP7670AS-TE2	V.ZONE 8/9 CNTROL			
IC301	MP7670AS-TE2	H.SKEW/BOW CNTROL			
IC302	MP7670AS-TE2	H.SIZE/LIN CNTROL			
IC303	MP7670AS-TE2	H.KEY/KEY BAL CNTROL			
IC304	MP7670AS-TE2	H.PIN/PIN BAL CNTROL			
IC305	MP7670AS-TE2	H.ZONE 2/3 CNTROL			
IC306	MP7670AS-TE2	H.ZONE 4/5 CNTROL			
IC307	MP7670AS-TE2	H.ZONE 6/7 CNTROL			
IC308	MP7670AS-TE2	H.ZONE 8/9 CNTROL			
Q1	2SC2712-YG	AD HD BUFFER			
Q2	2SC2712-YG	VD BUFFER			
Q3	2SC2712-YG	1/2V BUFFER			
Q4	2SC2712-YG	1/2H BUFFER			
Q5	FMW5	V.SIN2-SW			
Q6	2SA1162-YG	V.SIN2-BUFFER			
Q7	FMS1	V.SIN1-SW			
Q8	2SC2712-YG	V.SIN1-BUFFER			
Q9	FMW5	H.SIN1-SW			
Q10	2SA1162-YG	H.SIN1-BUFFER			
Q11	FMS1	H.SIN2-SW			
Q12	2SC2712-YG	H.SIN2-BUFFER			
Q13	FMS1	TILT1-SW			
Q14	2SC2712-YG	TILT1-BUFFER			
Q15	FMW5	TILT2-SW			

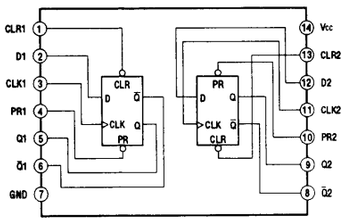
VPH-D50Q/D50QM

DA Board IC Block Diagrams

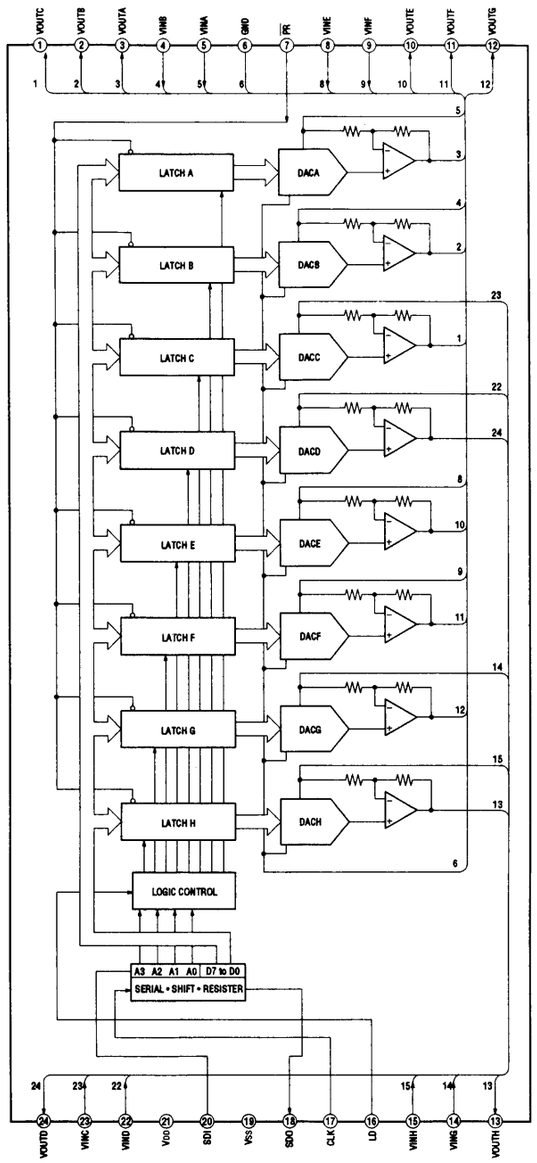
CXA1726AM (IC17)



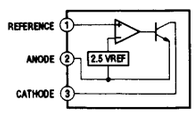
SN74HC74ANS (IC6)



MP7670AS (IC201-209, 301-308)

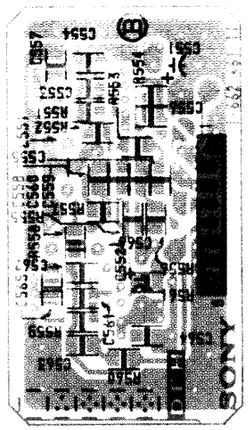


TL431CLP (IC5)

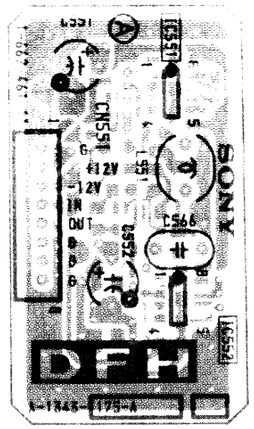


DFH (H SUB (R.G.B)) BOARD

— DFH BOARD —
<Conductor side>

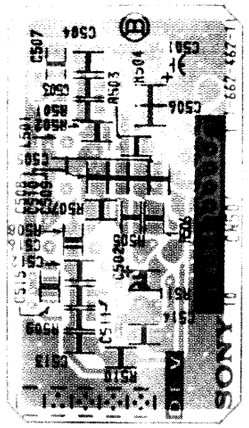


— DFH BOARD —
<Component side>

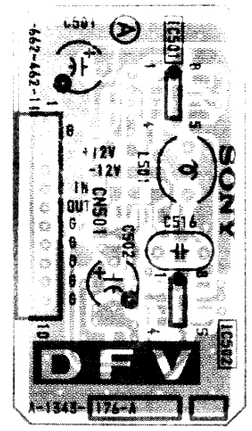


DFV (V SUB (R.G.B)) BOARD

— DFV BOARD —
<Conductor side>

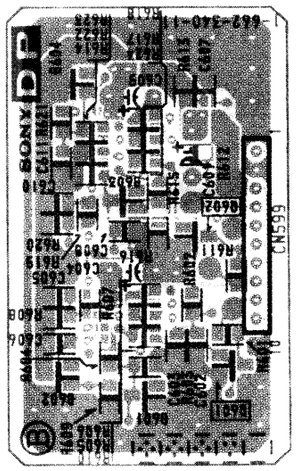


— DFV BOARD —
<Component side>

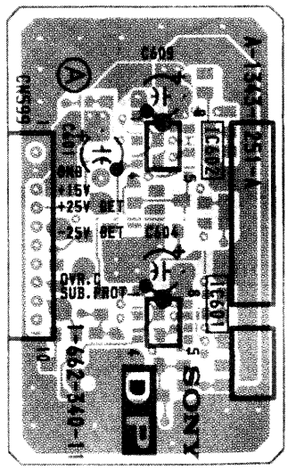


DP (COMPARATOR) BOARD

— DP BOARD —
<Conductor side>

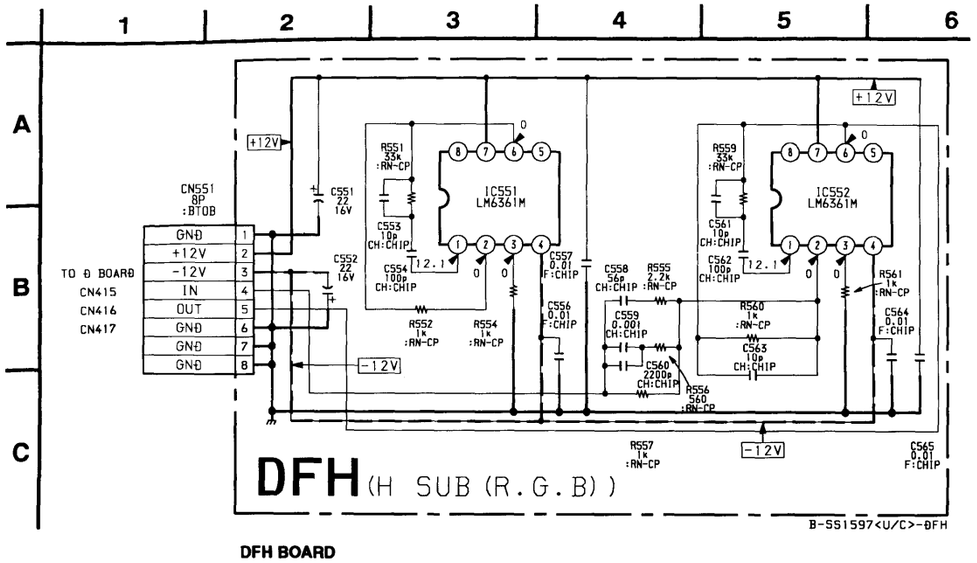


— DP BOARD —
<Component side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

• DFH (H SUB (R.G.B)) DIAGRAM

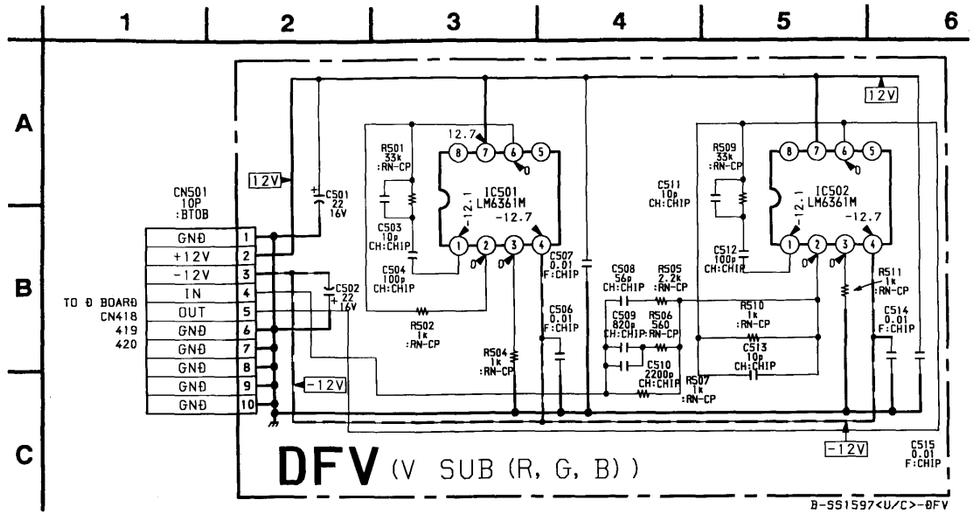


DFH BOARD

Function of Semiconductor

IC551	LM6361M	H SUB AMP
IC552	LM6361M	H SUB AMP

• DFV (V SUB (R.G.B)) DIAGRAM



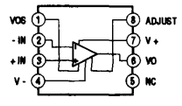
DFV BOARD

Function of Semiconductor

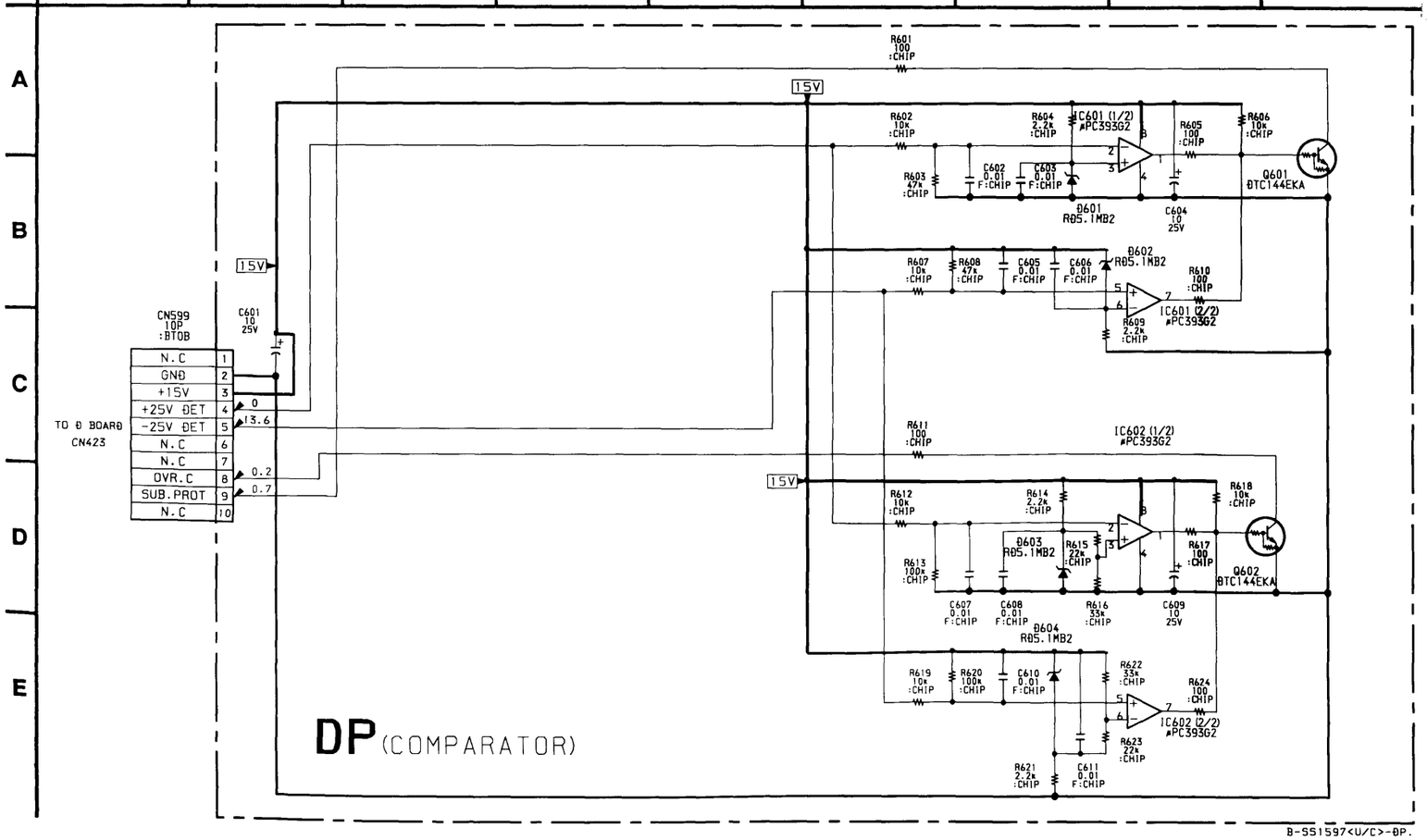
IC501	LM6361M	V SUB AMP
IC502	LM6361M	V SUB AMP

DFH, DFV Board IC Block Diagram

LM6361M (IC501, 502, 551, 552)



• DP (COMPARATOR) DIAGRAM



DP BOARD

Function of Semiconductor

D601	RD5.1M-B2	SUB PROT BIAS
D602	RD5.1M-B2	SUB PROT BIAS
D603	RD5.1M-B2	OVR C BIAS
D604	RD5.1M-B2	OVR C BIAS
IC601	UPC393G2	SUB PROT BIAS
IC602	UPC393G2	OVR C BIAS
Q601	DTC144EKA-T146	SUB PROT BIAS
Q602	DTC144EKA-T146	OVR C BIAS

DB (MULTIPLEX, SUB MATRIX, H/V ZONE CONTROL) BOARD

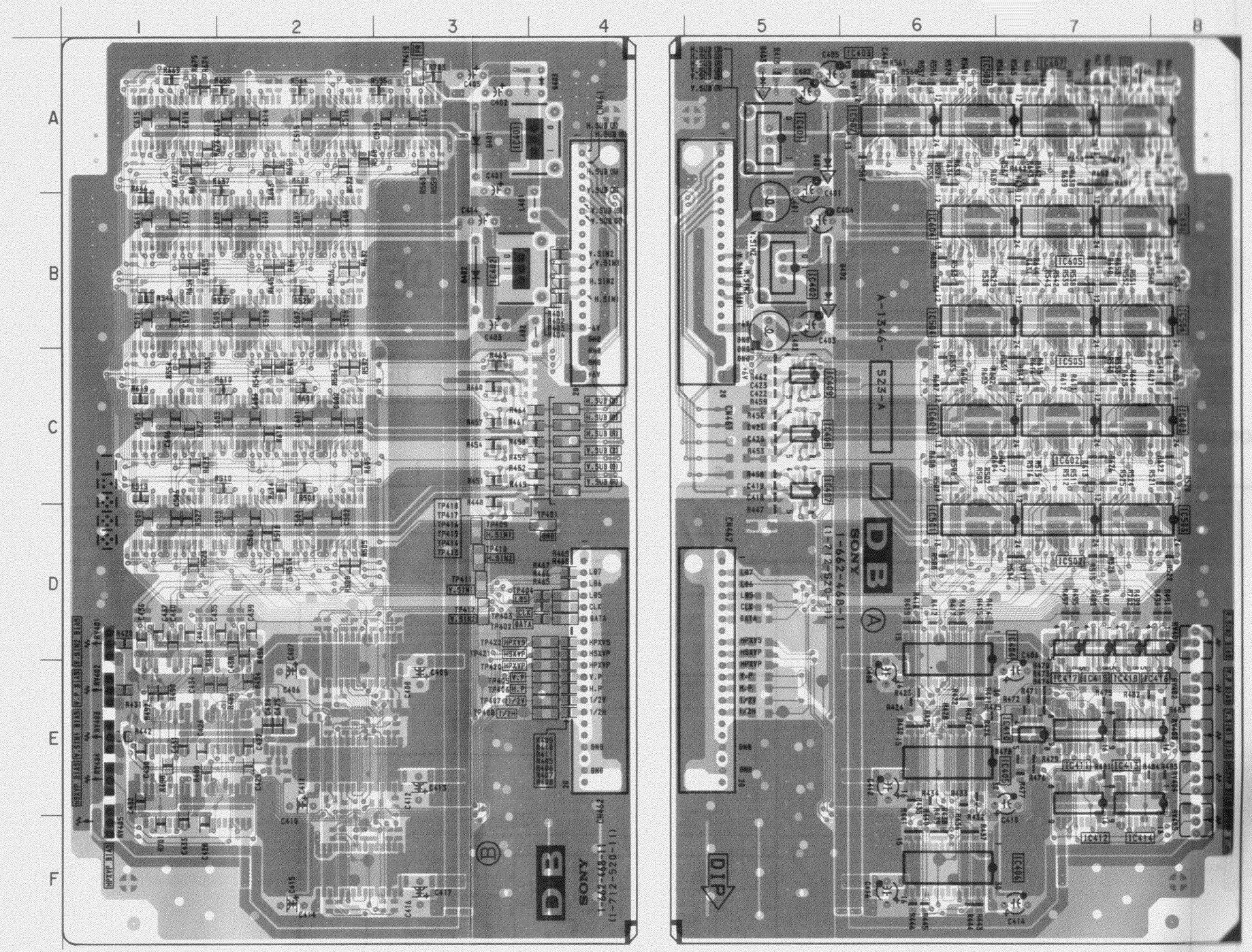
DB BOARD

Semiconductor Location

DIODE		TP404	D-4
		TP405	E-4
		TP406	E-4
D401	A-3	TP407	E-4
D402	B-3	TP408	E-4
D403	A-4	TP409	D-3
		TP410	D-3
IC			
		TP411	D-3
IC401	A-3	TP412	D-3
IC402	B-3	TP413	C-4
IC403	A-6	TP414	C-4
IC404	D-6	TP415	C-4
IC405	E-6	TP416	C-4
IC406	F-6	TP417	C-4
IC407	C-5	TP418	C-4
IC408	C-5	TP419	A-3
IC409	C-5	TP420	E-4
IC501	D-6		
		TP421	D-4
IC502	D-7	TP422	D-4
IC503	D-7		
IC504	B-6		
IC505	B-7		
IC506	B-7		
IC601	C-6		
IC602	C-7		
IC603	C-7		
IC604	B-6		
IC605	B-7		
IC606	B-7		
VARIABLE RESISTOR			
RV401	D-1		
RV402	E-1		
RV403	E-1		
TEST POINT			
TP401	D-4		
TP402	D-4		
TP403	D-4		

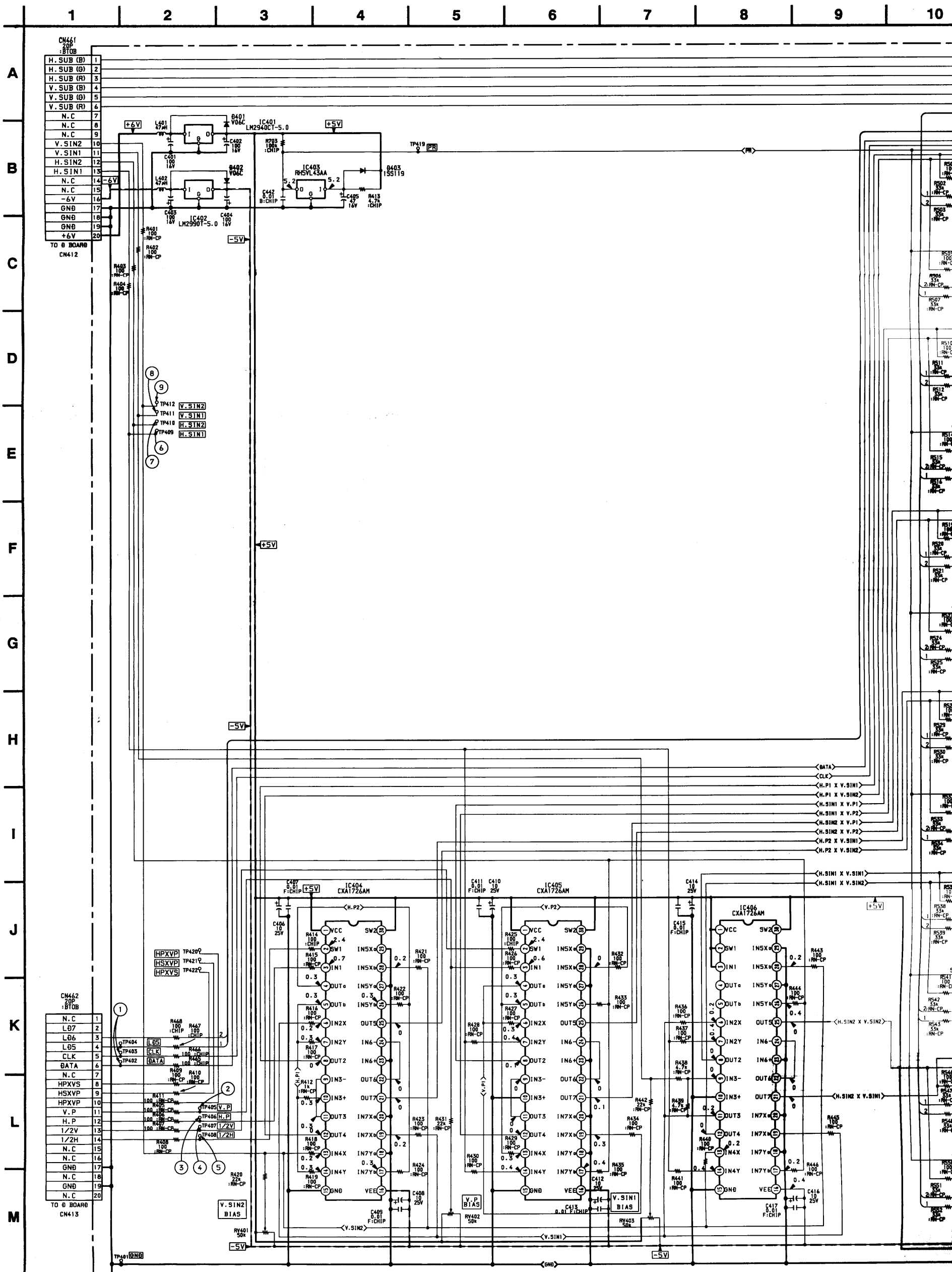
— DB BOARD — <Conductor side>

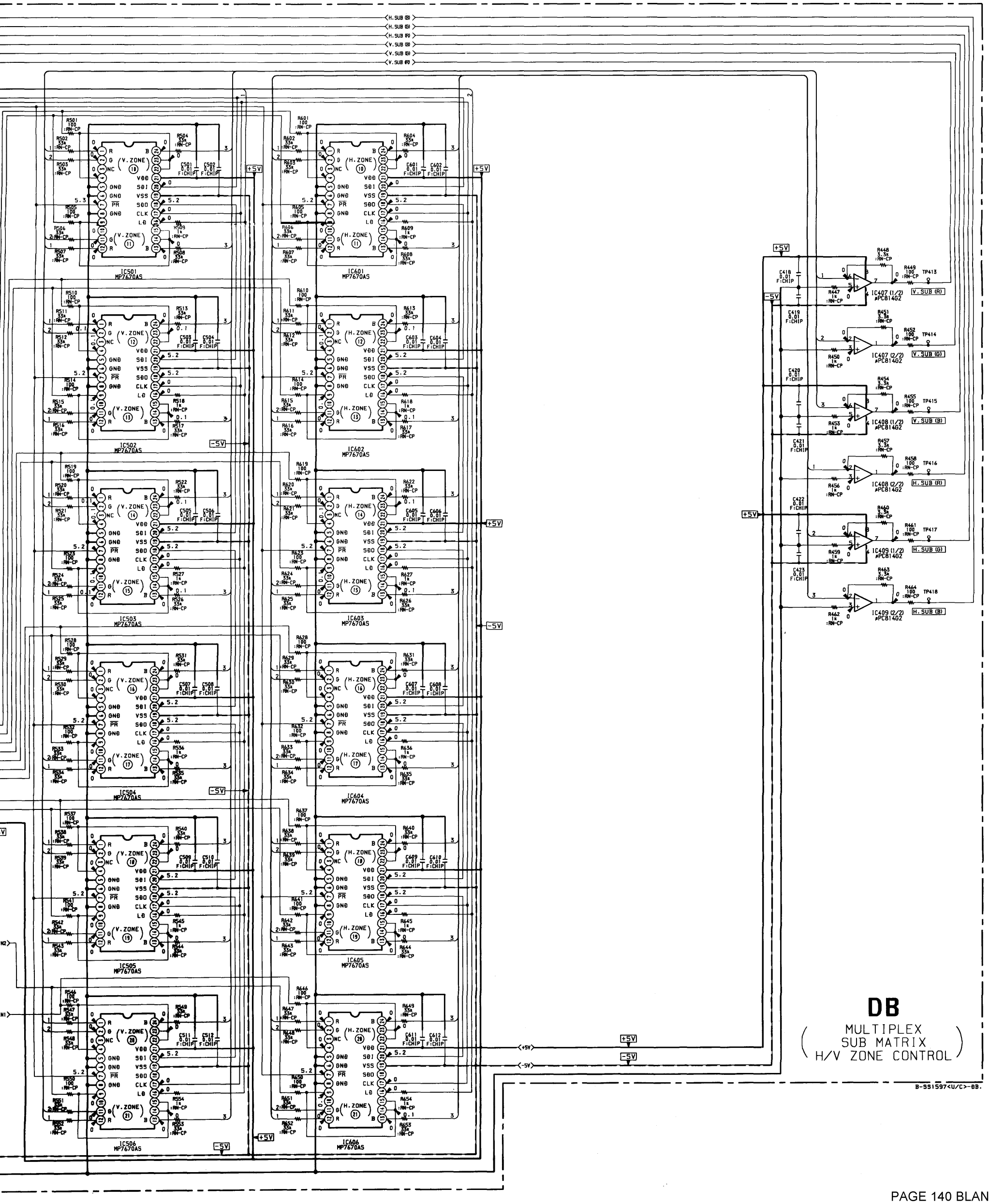
— DB BOARD — <Component side>



• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

- **DB (MULTIPLEX, SUB MATRIX, H/V ZONE CONTROL) DIAGRAM**
- Refer to page 4-141 for Waveforms
- Refer to page 4-141 for Function of Semiconductor
- Refer to page 4-142 for IC Block Diagrams





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DB Board Waveforms

① 5.1Vp-p (V)	② 2Vp-p (V)	③ 2.5Vp-p (2H/H)
④ 1.1Vp-p (H/2H)	⑤ 4.5Vp-p (H/2H)	⑥ 1.1Vp-p (H/2H)
⑦ 1.1Vp-p (H/2H)	⑧ 0.6Vp-p (V)	⑨ 0.65Vp-p (V)

DB BOARD

Function of Semiconductor

D401	V06C	+5V REG PROT
D402	V06C	–5V REG PROT
D403	1SS119-25	DISCHARGE
IC401	LM2940CT-5.0	+5V REG
IC402	LM2990T-5.0	–5V REG
IC403	RH5VL43AA-T1	DAC RESET
IC404	CXA1726AM	MULTIPLEX-1
IC405	CXA1726AM	MULTIPLEX-2
IC406	CXA1726AM	MULTIPLEX-3
IC407	UPC814G2-T1	SUB-MATRIX-1
IC408	UPC814G2-T1	SUB-MATRIX-2
IC409	UPC814G2-T1	SUB-MATRIX-3
IC501	MP7670AS-TE2	V.ZONE 10/11 CNTROL
IC502	MP7670AS-TE2	V.ZONE 12/13 CNTROL
IC503	MP7670AS-TE2	V.ZONE 14/15 CNTROL
IC504	MP7670AS-TE2	V.ZONE 16/17 CNTROL
IC505	MP7670AS-TE2	V.ZONE 18/19 CNTROL
IC506	MP7670AS-TE2	V.ZONE 20/21 CNTROL
IC601	MP7670AS-TE2	H.ZONE 10/11 CNTROL
IC602	MP7670AS-TE2	H.ZONE 12/13 CNTROL
IC603	MP7670AS-TE2	H.ZONE 14/15 CNTROL
IC604	MP7670AS-TE2	H.ZONE 16/17 CNTROL
IC605	MP7670AS-TE2	H.ZONE 18/19 CNTROL
IC606	MP7670AS-TE2	H.ZONE 20/21 CNTROL

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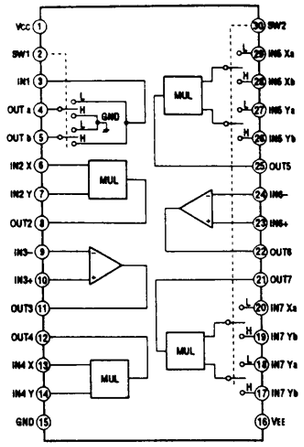
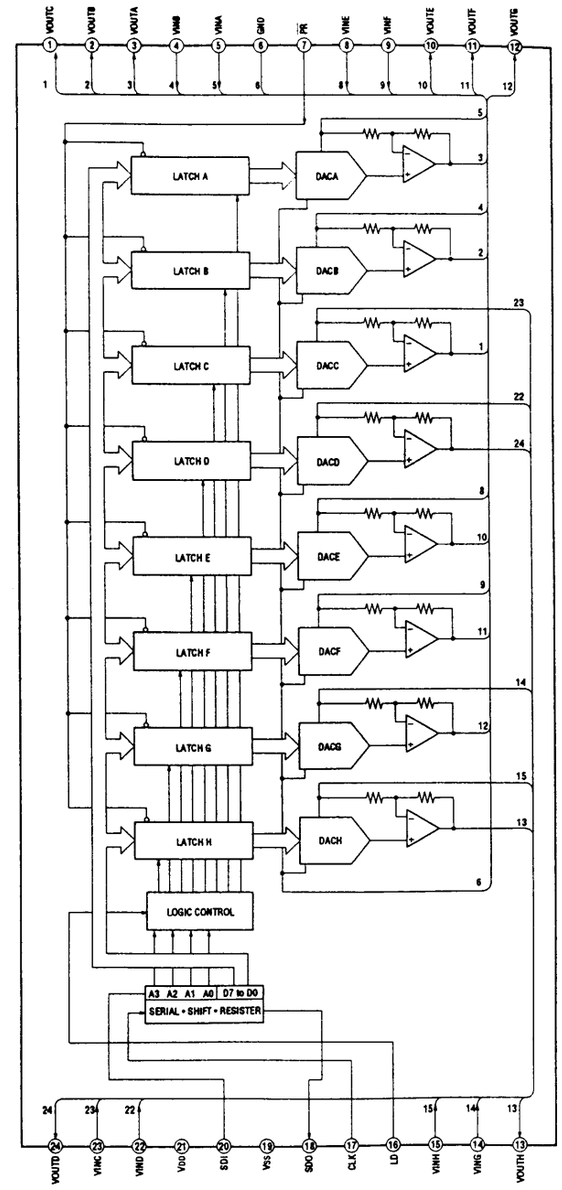
DB Board IC Block Diagrams

CXA1726AM (IC404-406)

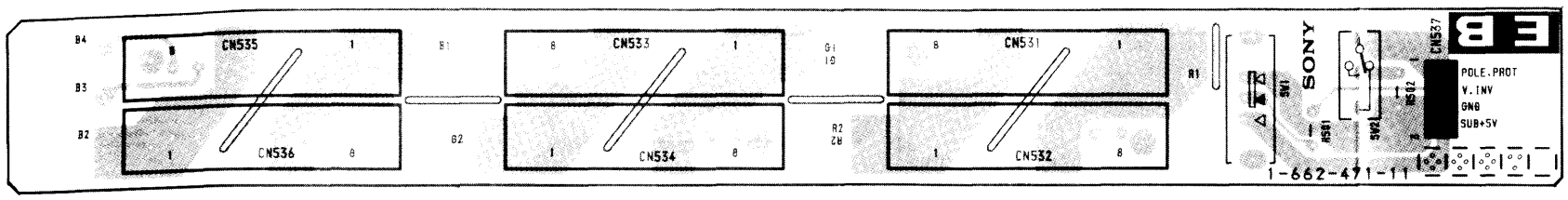


MP7670AS (IC501-506, 601-606)

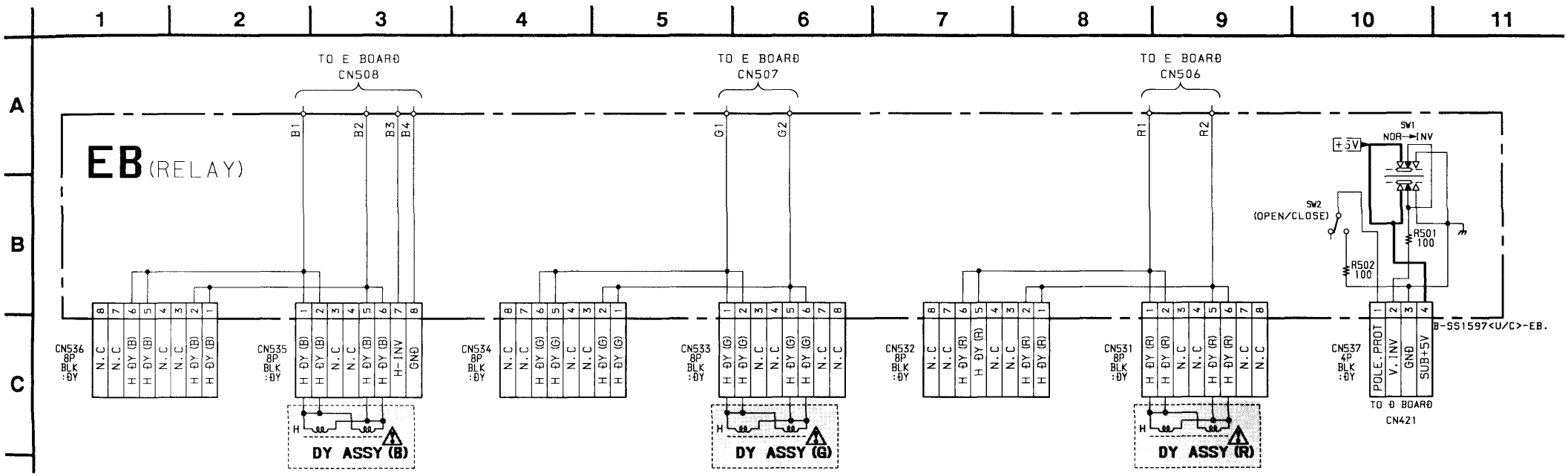


EB (RELAY) BOARD

— EB BOARD — <Conductor side>



• EB (RELAY) DIAGRAM



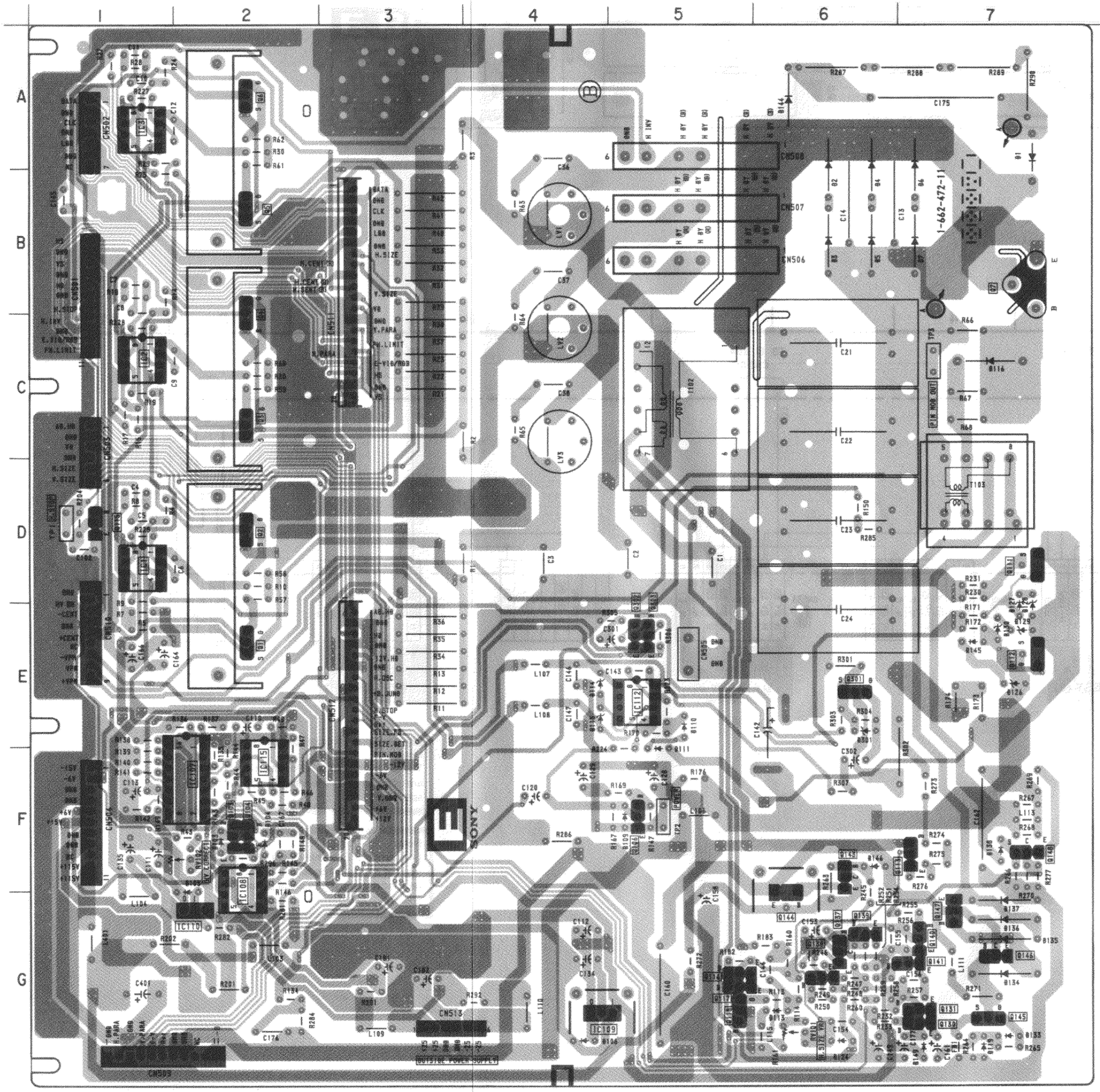
Note:
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

VPH-D50Q/D50QM

E (H OUT, H CENT OUT, H OSC) BOARD

— E BOARD — <Conductor side>



E BOARD

Semiconductor Location

DIODE		TRANSISTOR	
D1	A-7	Q1	E-2
D2	B-6	Q2	D-2
D3	B-6	Q3	C-2
D4	B-6	Q4	C-2
D5	B-6	Q5	B-2
D6	B-7	Q6	B-2
D7	B-7	Q7	B-7
D103	F-2	Q103	F-2
D104	F-2	Q104	F-2
D105	G-2	Q106	F-5
D106	G-4	Q111	D-7
D109	F-5	Q112	E-7
D110	E-5	Q113	F-7
D111	F-5	Q115	D-1
D113	G-6	Q116	G-5
D114	E-4	Q117	G-5
D115	E-4	Q118	G-5
D116	C-7	Q130	G-7
D119	G-7	Q131	G-7
D124	G-6	Q137	G-6
D126	E-7	Q138	G-6
D127	E-7	Q139	G-6
D128	E-7	Q140	G-7
D129	E-7	Q141	G-7
D130	E-7	Q143	F-6
D133	G-7	Q144	G-6
D134	G-7	Q145	G-7
D135	G-7	Q146	G-7
D136	G-7	Q147	G-7
D137	G-7	Q148	F-7
D138	F-7	Q301	E-6
D144	A-6	Q302	E-5
D145	F-7	Q303	E-5
D146	F-6		
D149	G-7	VARIABLE RESISTOR	
D301	E-6		
IC		RV101	G-6
		RV102	F-2
IC1	D-1	TEST POINT	
IC2	C-1		
IC3	A-1	TP1	D-1
IC107	F-2	TP2	F-5
IC108	F-2	TP3	C-7
IC109	G-4		
IC110	G-2		
IC112	E-5		
IC115	F-2		
TORYMER			
LV1	B-4		
LV2	C-4		
LV3	C-4		

• : Pattern from the side which enables seeing.

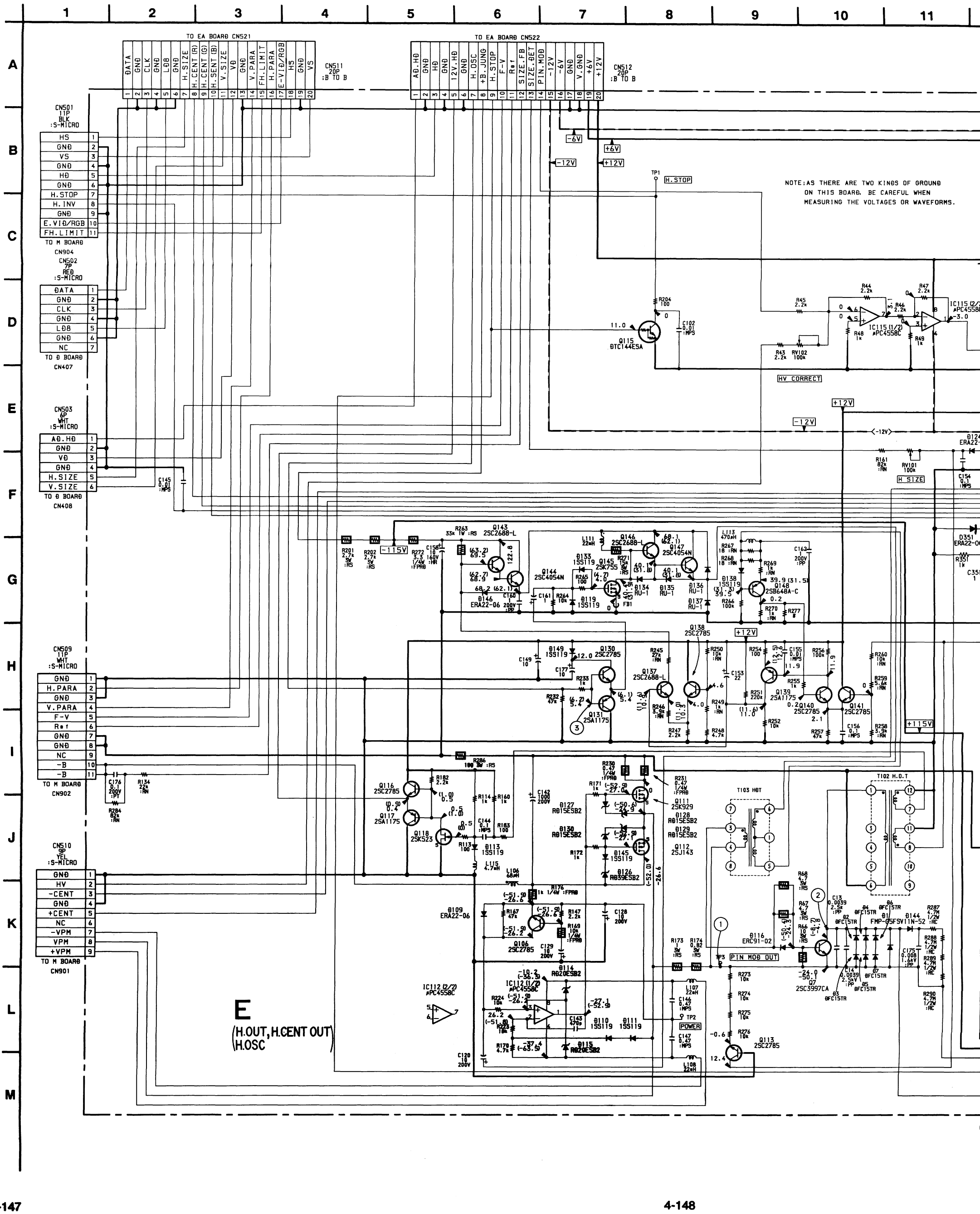
• : Pattern of the rear side.

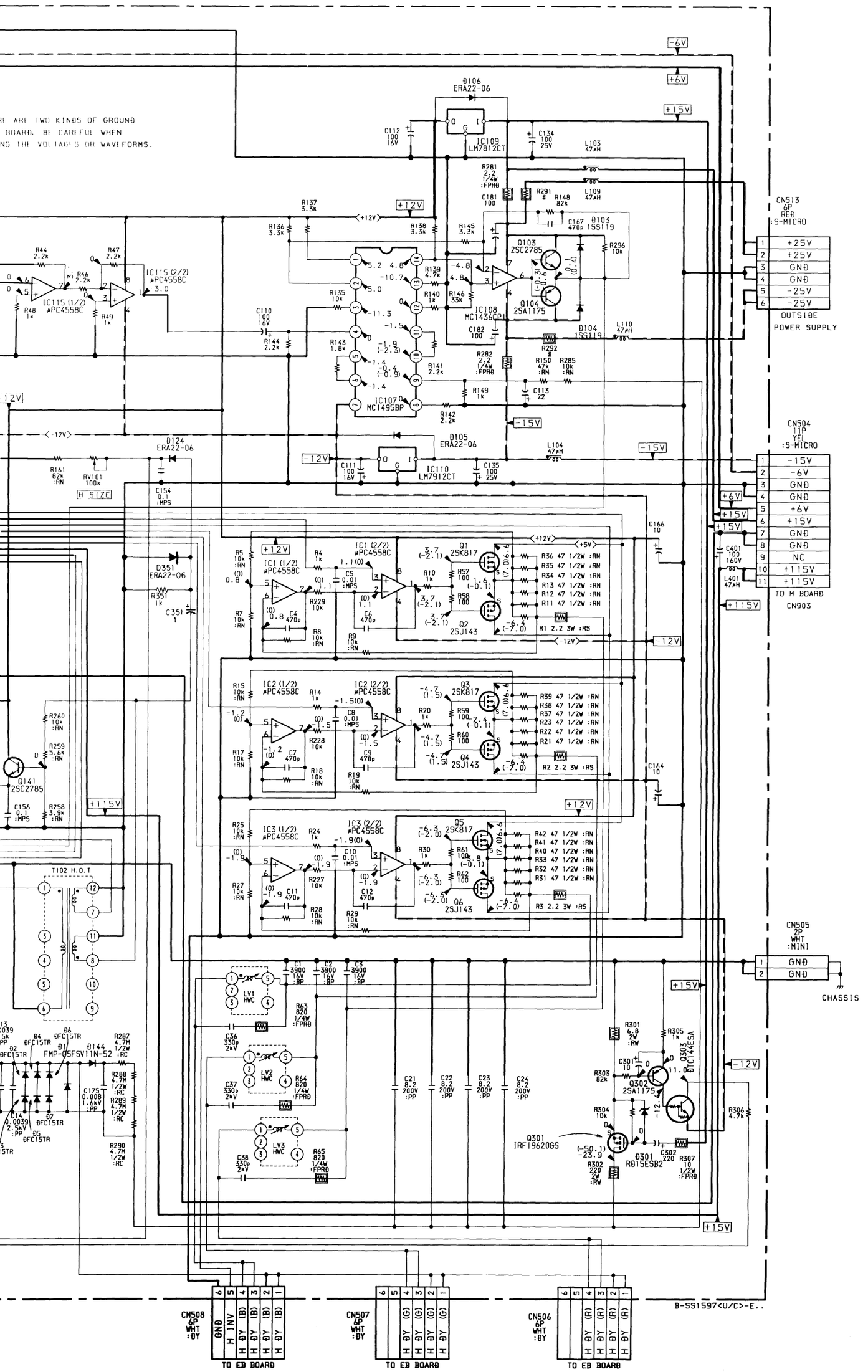
Schematic Diagram

← EB board

• **E (H OUT, H CENT OUT, H OSC) DIAGRAM**

• Refer to page 4-150 for Function of Semiconductor



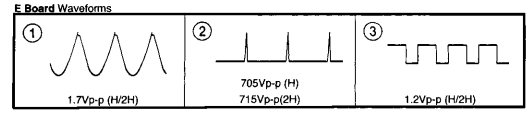

RE ARE TWO KINDS OF GROUND
BOARD. BE CAREFUL WHEN
NG THE VOLTAGES OR WAVEFORMS.
-6V
+6V
+15V
+12V
-12V
-15V
+5V
+115V
D106 ERA22-06
IC109 LM7812CT
IC110 LM7912CT
IC107 MC1495BP
IC108 MC1436CP1
IC115 (1/2) μPC4558C
IC115 (2/2) μPC4558C
IC1 (1/2) μPC4558C
IC1 (2/2) μPC4558C
IC2 (1/2) μPC4558C
IC2 (2/2) μPC4558C
IC3 (1/2) μPC4558C
IC3 (2/2) μPC4558C
D124 ERA22-06
D105 ERA22-06
D351 ERA22-06
D103 1SS119
D104 1SS119
Q103 2SC2785
Q104 2SA1175
Q1 2SK817
Q2 2SJ143
Q3 2SK817
Q4 2SJ143
Q5 2SK817
Q6 2SJ143
Q141 2SC2785
Q301 IRFI9620GS
Q302 2SA1175
D301 RD15ESB2
D303 DTC144ESA
D1 FMP-05FSV11N-52
D144 1N-52
H SIZE
T102 H.O.T
CN513 6P RED :S-MICRO
1 +25V
2 +25V
3 GND
4 GND
5 -25V
6 -25V
OUTSIDE POWER SUPPLY
CN504 11P YEL :S-MICRO
1 -15V
2 -6V
3 GND
4 GND
5 +6V
6 +15V
7 GND
8 GND
9 NC
10 +115V
11 +115V
TO M BOARD CN903
CN505 2P WHT :MINI
1 GND
2 GND
CHASSIS
CN508 6P WHT :BY
GND
H INV
H BY (B)
H BY (B)
H BY (B)
H BY (B)
TO EB BOARD
CN507 6P WHT :BY
H BY (G)
H BY (G)
H BY (G)
H BY (G)
TO EB BOARD
CN506 6P WHT :BY
H BY (R)
H BY (R)
H BY (R)
H BY (R)
TO EB BOARD
B-SS1597<U/C>-E..

E BOARD

Function of Semiconductor

D1	FMP-G5FS	H OUT DAMPER
D2	DFC15TR	H OUT DAMPER
D3	DFC15TR	H OUT DAMPER
D4	DFC15TR	H OUT DAMPER
D5	DFC15TR	H OUT DAMPER
D6	DFC15TR	H OUT DAMPER
D7	DFC15TR	H OUT DAMPER
D103	1SS119-25	PROTECT
D104	1SS119-25	PROTECT
D105	ERA22-06AVRBT	PROTECT
D106	ERA22-06AVRBT	PROTECT
D109	ERA22-06AVRBT	CLAMP
D110	1SS119-25	LEVEL SHIFT
D111	1SS119-25	LEVEL SHIFT
D113	1SS119-25	PROTECT
D114	RD20ESB2	PROTECT
D115	RD20ESB2	PROTECT
D116	ERC91-02	SPEED UP
D119	1SS119-25	PROTECT
D124	ERA22-06AVRBT	H SIZE DET
D126	RD39ESB2	PIN MOD DET
D127	RD15ESB2	PROTECT
D128	RD15ESB2	PROTECT
D129	RD15ESB2	PROTECT
D130	RD15ESB2	PROTECT
D133	1SS119-25	SPEED UP
D134	RU-1	H DRIVE PROTECT
D135	RU-1	H DRIVE PROTECT
D136	RU-1	H DRIVE PROTECT
D137	RU-1	H DRIVE PROTECT
D138	1SS119-25	THERM CANCEL
D144	V11N	PROTECT
D145	1SS119-25	PROTECT
D146	ERA22-06AVRBT	PROTECT
D149	1SS119-25	VOLTAGE HOLD
D301	RD15ESB2	PROTECT
IC1	UPC4558C	H CENT DRIVE
IC2	UPC4558C	H CENT DRIVE
IC3	UPC4558C	H CENT DRIVE
IC107	MC1495BP	MOD LEVEL CONTROL
IC108	MC1436CP1	OPIN MOD PRE AMP
IC109	M7812CT	+12V REG
IC110	LM7912CT	−12V REG
IC112	UPC4558C	PIN MOD AMP
IC115	UPC4558C	HV MOD AMP
Q1	2SK817	+H CENT OUT (R)
Q2	2SJ143	−H CENT OUT (R)
Q3	2SK817	+H CENT OUT (G)
Q4	2SJ143	−H CENT OUT (G)
Q5	2SK817	+H CENT OUT (B)
Q6	2SJ143	−H CENT OUT (B)
Q7	2SC3997CA	H OUT
Q103	2SC2785-HFE	PIN MOD PRE BUFFER
Q104	2SA1175-HFE	PIN MOD PRE BUFFER
Q106	2SC2785-HFE	PIN MOD PROTECT
Q111	2SK929	PIN MOD OUT
Q112	2SJ143	PIN MOD OUT
Q113	2SC2785-HFE	H SIZE CONST
Q115	DTC144ESA-TP	H STOP SW
Q116	2SC2785-HFE	HD OUT
Q117	2SA1175-HFE	HD OUT
Q118	2SK523-TP-M1	HD DRIVE
Q130	2SC2785-HFE	H OSC BUFFER
Q131	2SA1175-HFE	H OSC BUFFER
Q137	2SC2688-L	IB CONTROL
Q138	2SC2785-HFE	IB CONTROL
Q139	2SA1175-HFE	IB CONTROL
Q140	2SC2785-HFE	IB DET
Q141	2SC2785-HFE	H PULSE DETECT
Q143	2SC2688-L	H DRIVE REG
Q144	2SC4054N	H DRIVE REG
Q145	2SK755	H DRIVE
Q146	2SC2688-L	HD DRIVE BUFFER
Q147	2SC4054N	HD DRIVE BUFFER
Q148	2SB648A-C	IB DETECTOR
Q301	IRFI9620GS	DISCHARGE SW
Q302	2SA1175-HFE	CURRENT DETECT
Q303	DTC144ESA-TP	H STOP SW

E Board Waveforms



EA (AFC, H SHIFT, H SIZE CENT ADJ) BOARD

EA BOARD

Semiconductor Location

DIODE	
D1	A-1
D2	A-1
D3	C-1
D4	A-2
D5	A-3
D6	A-3
D7	A-3
D8	E-1
D9	E-1
D10	D-2
D11	D-2
D12	E-2
D13	E-3
D14	E-3
D15	E-3
D16	E-3
D17	E-3
D301	D-6
D302	C-6
D303	C-2

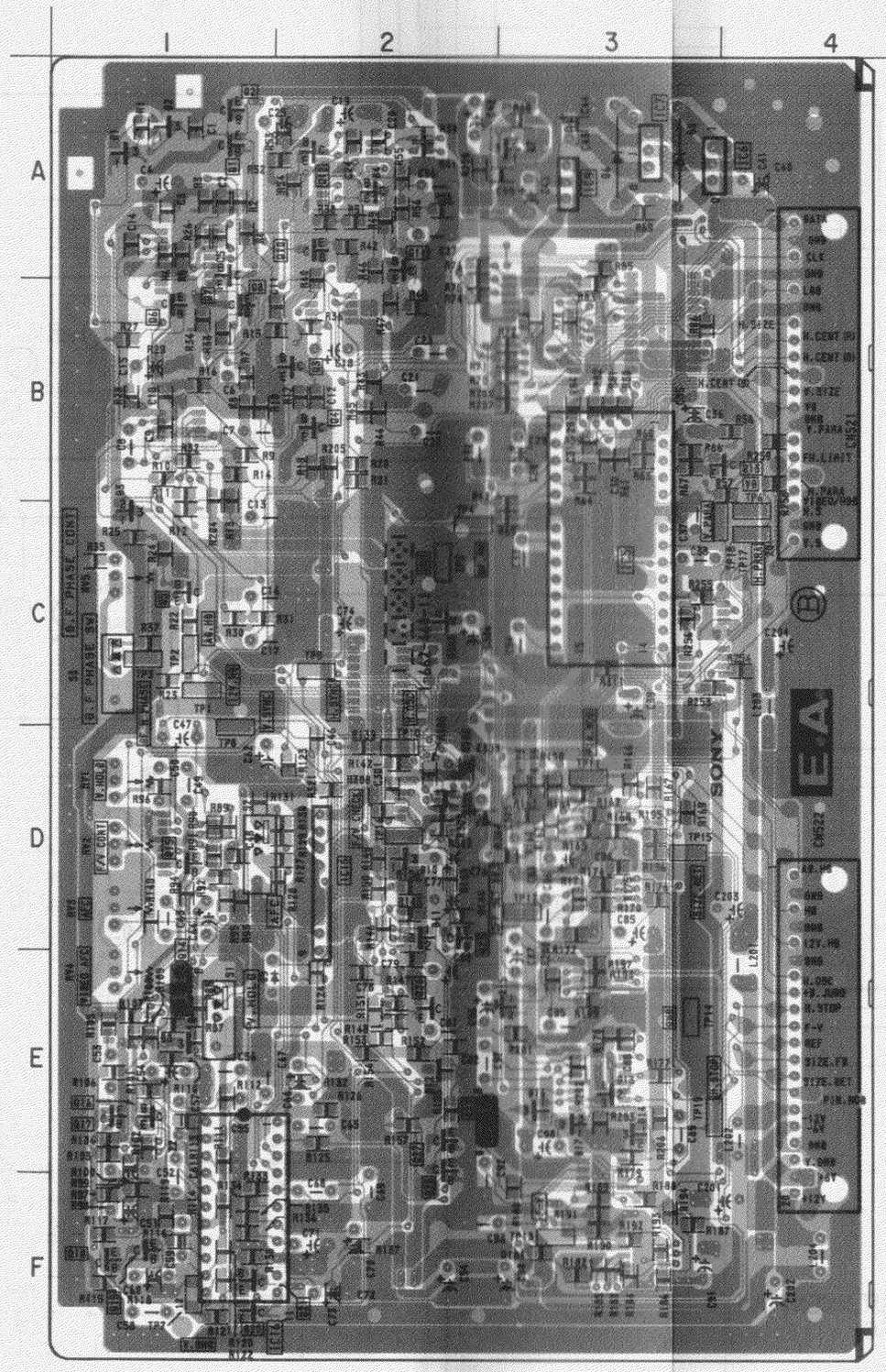
IC	
IC1	A-7
IC2	B-7
IC3	A-7
IC4	B-7
IC5	C-3
IC6	A-4
IC7	A-3
IC8	A-6
IC9	A-3
IC10	B-6
IC11	B-5
IC12	D-7
IC13	E-8
IC14	E-8
IC15	D-2
IC16	F-1
IC17	C-7
IC18	D-7
IC19	D-6
IC20	D-6
IC21	E-6
IC22	F-6
IC23	F-5
IC24	E-6
IC31	C-5
IC251	C-5
IC301	D-6

TRANSISTOR	
Q1	A-1
Q2	A-1
Q3	B-2
Q4	B-2
Q5	C-1
Q6	B-1
Q7	B-1
Q8	A-1
Q9	A-6
Q10	A-2
Q11	A-2
Q12	A-2
Q13	B-4
Q14	E-1
Q15	D-1
Q16	E-1
Q17	E-1
Q18	F-1
Q19	F-1
Q20	F-1
Q21	F-1
Q22	C-6
Q23	D-2
Q24	E-7
Q25	E-7
Q26	E-2
Q27	E-2
Q28	E-2
Q29	E-2

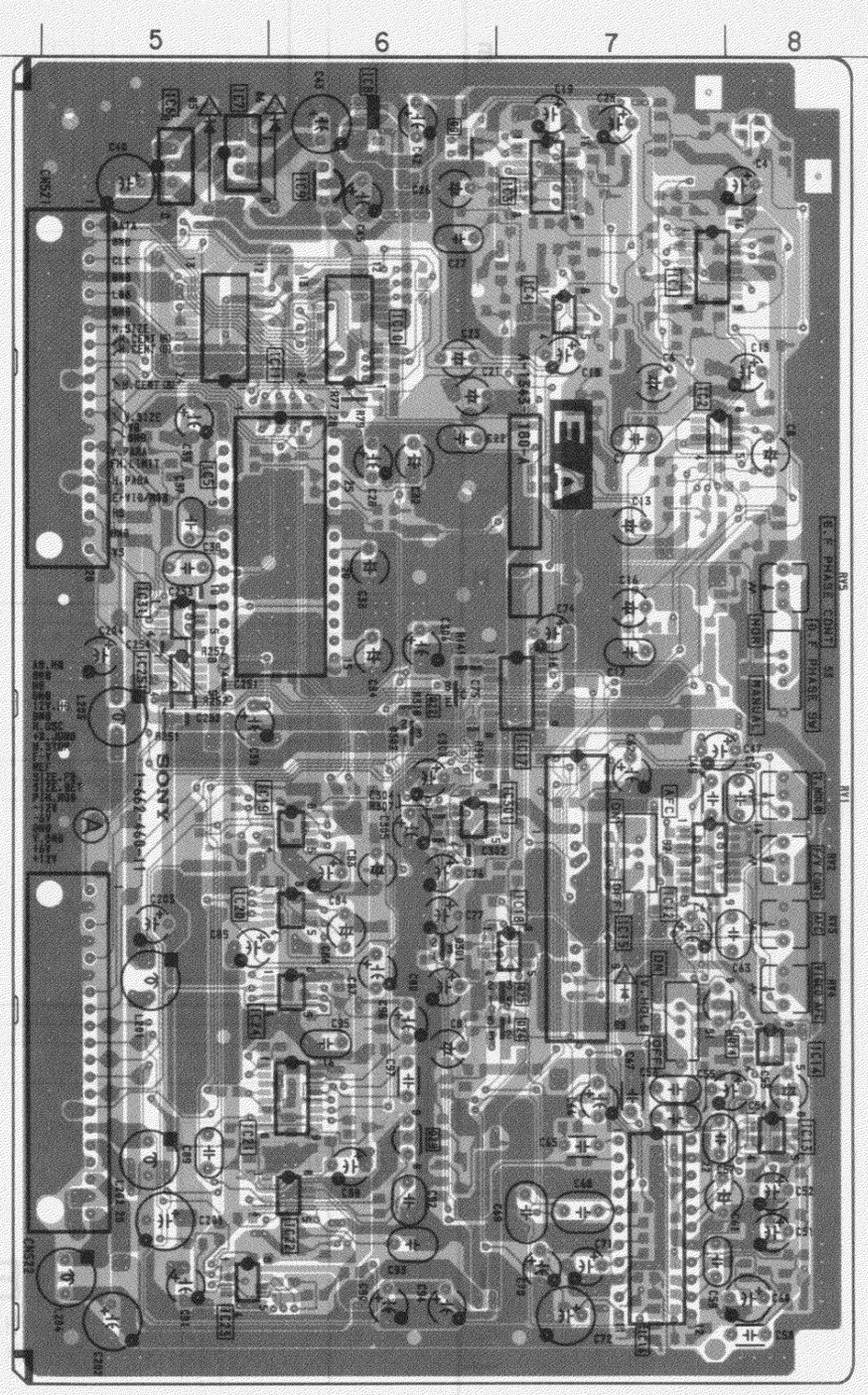
VARIABLE RESISTOR	
RV1	D-1
RV2	D-1
RV3	D-1
RV4	E-1
RV5	C-1

TEST POINT	
TP1	C-1
TP2	C-1
TP3	C-1
TP4	C-2
TP5	C-2
TP6	B-4
TP7	F-1
TP8	C-1
TP9	C-2
TP10	D-2
TP11	D-3
TP12	D-3
TP13	F-3
TP14	E-3
TP15	D-3
TP16	D-2
TP17	C-4
TP18	C-4
TP19	E-3

— EA BOARD — <Conductor side>



— EA BOARD — <Component side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.